# DENON

# **UNIVERSAL AUDIO / VIDEO PLAYER**

# **DVD-A1UD**

**Owner's Manual** 

**Bedienungsanleitung** 

Manuel de l'Utilisateur

Manuale delle istruzioni

Manual del usuario

Gebruiksaanwijzing

Bruksanvisning

#### \*\* Button illustrations used in this manual for operation explanation are for the Remote Control Unit.

You can operate the unit using the button of the same name on the front panel of the unit.

\*\* Die in diesem Handbuch verwendeten Tasten-Illustrationen für die Betriebserklärung beziehen sich auf die Fernbedienung.

Sie können das Gerät mit der gleichnamigen Taste an der Frontkonsole des Gerätes bedienen.

- \* Les illustrations des boutons présentes dans ce manuel servent à expliquer le fonctionnement de la télécommande. Vous pouvez contrôler l'appareil à l'aide du bouton portant le même nom sur la façade de l'appareil.
- \*\* Le illustrazioni dei pulsanti mostrate in questo manuale di spiegazione si riferiscono al telecomando.
- E' possibile adoperare l'unità utilizzando i pulsanti del nome corrispondente presenti sul pannello frontale dell'unità.
- ※ Las ilustraciones de los botones utilizadas en este manual con propósitos de explicación son para la unidad del mando a distancia.

Puede operar la unidad utilizando el botón del mismo nombre en el panel delantero de la unidad.

 De gebruikte toetsillustraties in deze handleiding voor uitleg van de bediening zijn voor de afstandsbediening.
 U kunt het toestel bedienen door de toets met dezelfde naam op het voorpaneel van het toestel te gebruiken.

※ Bilder på knappar i denna bruksanvisning för att förklara användningen gäller fjärrkontrollen.

Du kan också använda knapparna med samma namn på frontpanelen på enheten.

# GUI Graphical User Interface

#### English

Use this manual in combination with the operating guide displayed on the GUI screen.

GUI Menu Operation (P page 24)

#### Deutsch

Verwenden Sie dieses Handbuch zusammen mit den Bedienungsanweisungen auf dem GUI-Bildschirm.

GUI-Menübedienung (🖅 Seite 24)

#### Français

Utilisez ce manuel en même temps que le guide d'utilisation affiché sur l'écran GUI (Interface graphique).

Fonctionnement du menu de l'interface graphique GUI (IBP page 24)

#### Italiano

Usare questo manuale insieme alla guida operativa visualizzata sulla schermata GUI.

Operazioni menu GUI (🕼 pagina 24)

#### Español

Utilice este manual conjuntamente con la guía de uso que aparece en la pantalla GUI.

Uso de los menús GUI (🖅 página 24)

#### Nederlands

Gebruik deze gebruiksaanwijzing samen met de aanwijzingen die op het GUI-scherm worden getoond.

Het GUI menu bedienen (B blz. 24)

#### Svenska

Använd denna bruksanvisning i kombination med

anvisningarna på GUI-skärmen.

Användning av GUI-menyerna (🖅 sidan 24)

#### □ SAFETY PRECAUTIONS



#### CAUTION:

#### TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

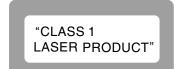


The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

#### WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

#### CLASS 1 LASER PRODUCT LUOKAN 1 LASERLAITE KLASS 1 LASERAPPARAT



- ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.
- VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄMTTÖMÄLLE LASERSÄTEILYLLE.
- VARNING: OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.



ATTENZIONE: QUESTO APPARECCHIO E' DOTATO DI DISPOSITIVO OTTICO CON RAGGIO LASER. L'USO IMPROPRIO DELL'APPARECCHIO PUO' CAUSARE PERICOLOSE ESPOSIZIONI A RADIAZIONI!

# IMPOTANT SAFETY INSTRUCTIONS

- 1. Read these instructions.
- 2. Keep these instructions.
- 3. Heed all warnings.
- 4. Follow all instructions.
- 5. Do not use this apparatus near water.
- 6. Clean only with dry cloth.
- 7. Do not block any ventilation openings.
- Install in accordance with the manufacturer's instructions.
- 8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11. Only use attachments/accessories specified by the manufacturer.
- 12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
- 13. Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15. Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

## CAUTION:

To completely disconnect this product from the mains, disconnect the plug from the wall socket outlet.

The mains plug is used to completely interrupt the power supply to the unit and must be within easy access by the user.

#### VORSICHT:

Um dieses Gerät vollständig von der Stromversorgung abzutrennen, ziehen Sie bitte den Stecker aus der Wandsteckdose.

Der Netzstecker wird verwendet, um die Stromversorgung zum Gerät völlig zu unterbrechen; er muss für den Benutzer gut und einfach zu erreichen sein.

#### **PRECAUTION:**

Pour déconnecter complètement ce produit du courant secteur, débranchez la prise de la prise murale.

La prise secteur est utilisée pour couper complètement l'alimentation de l'appareil et l'utilisateur doit pouvoir y accéder facilement.

#### ATTENZIONE:

Per scollegare completamente questo prodotto dalla rete di alimentazione elettrica, scollegare la spina dalla relativa presa a muro.

La spina di rete viene utilizzata per interrompere completamente l'alimentazione all'unità e deve essere facilmente accessibile all'utente.

#### **PRECAUCIÓN:**

Para desconectar completamente este producto de la alimentación eléctrica, desconecte el enchufe del enchufe de la pared. El enchufe de la alimentación eléctrica se utiliza para interrumpir por completo el suministro de alimentación eléctrica a la unidad y debe de encontrarse en un lugar al que el usuario tenga fácil acceso.

#### WAARSCHUWING:

Om de voeding van dit product volledig te onderbreken moet de stekker uit het stopcontact worden getrokken.

De netstekker wordt gebruikt om de stroomtoevoer naar het toestel volledig te onderbreken en moet voor de gebruiker gemakkelijk bereikbaar zijn.

# FÖRSIKTIHETSMÅTT:

Koppla loss stickproppen från eluttaget för att helt skilja produkten från nätet.

Stickproppen används för att helt bryta strömförsörjningen till apparaten, och den måste vara lättillgänglig för användaren.

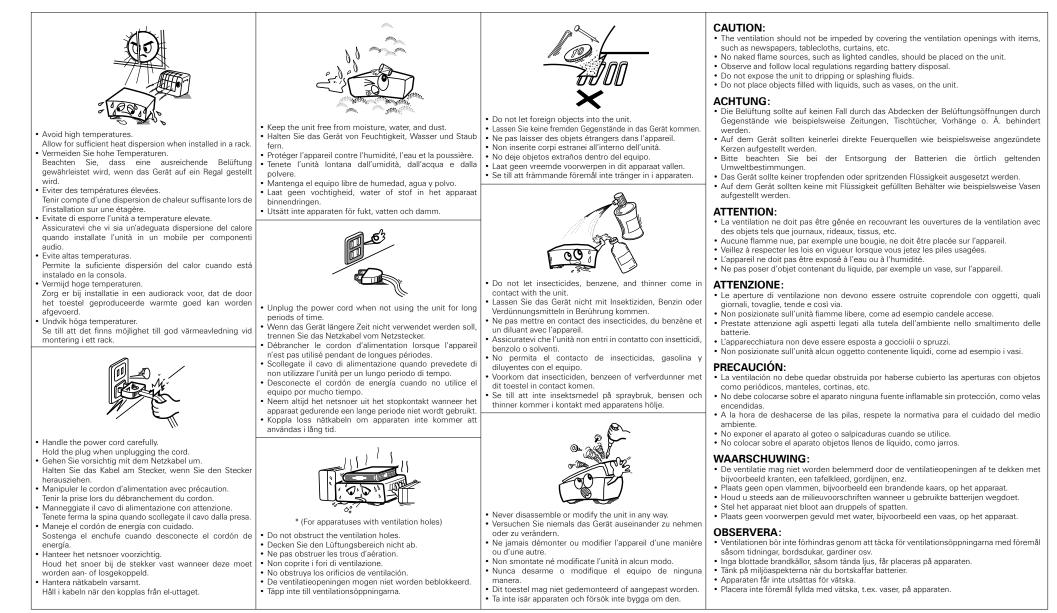
#### CAUTION:

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THIS PRODUCT SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.



#### NOTE ON USE / HINWEISE ZUM GEBRAUCH / OBSERVATIONS RELATIVES A L'UTILISATION / NOTE SULL'USO / NOTAS SOBRE EL USO / ALVORENS TE GEBRUIKEN / OBSERVERA ANGÅENDE ANVÄNDNINGEN



#### DECLARATION OF CONFORMITY

We declare under our sole responsibility that this product, to which this declaration relates, is in conformity with the following standards: EN60065, EN55013, EN55020, EN61000-3-2 and EN61000-3-3. Following the provisions of 2006/95/EC and 2004/108/EC Directive.

#### ÜBEREINSTIMMUNGSERKLÄRUNG

Wir erklären unter unserer Verantwortung, daß dieses Produkt, auf das sich diese Erklärung bezieht, den folgenden Standards entspricht: EN60065, EN55013, EN55020, EN61000-3-2 und EN61000-3-3. Entspricht den Verordnungen der Direktive 2006/95/EC und 2004/108/ EC.

#### DECLARATION DE CONFORMITE

Nous déclarons sous notre seule responsabilité que l'appareil, auquel se réfère cette déclaration, est conforme aux standards suivants: EN60065, EN55013, EN55020, EN61000-3-2 et EN61000-3-3. D'après les dispositions de la Directive 2006/95/EC et 2004/108/EC.

#### DICHIARAZIONE DI CONFORMITÀ

Dichiariamo con piena responsabilità che questo prodotto, al quale la nostra dichiarazione si riferisce, è conforme alle seguenti normative: EN60065, EN55013, EN55020, EN61000-3-2 e EN61000-3-3. In conformità con le condizioni delle direttive 2006/95/EC e 2004/108/EC. QUESTO PRODOTTO E' CONFORME AL D.M. 28/08/95 N. 548

#### DECLARACIÓN DE CONFORMIDAD

Declaramos bajo nuestra exclusiva responsabilidad que este producto al que hace referencia esta declaración, está conforme con los siguientes estándares:

EN60065, EN55013, EN55020, EN61000-3-2 y EN61000-3-3. Siguiendo las provisiones de las Directivas 2006/95/EC y 2004/108/EC.

#### • EENVORMIGHEIDSVERKLARING

Wij verklaren uitsluitend op onze verantwoordelijkheid dat dit produkt, waarop deze verklaring betrekking heeft, in overeenstemming is met de volgende normen:

EN60065, EN55013, EN55020, EN61000-3-2 en EN61000-3-3. Volgens de bepalingen van de Richtlijnen 2006/95/EC en 2004/108/EC.

#### ÖVERENSSTÄMMELSESINTYG

Härmed intygas helt på eget ansvar att denna produkt, vilken detta intyg avser, uppfyller följande standarder: EN60065, EN55013, EN55020, EN61000-3-2 och EN61000-3-3.

Enligt stadgarna i direktiv 2006/95/EC och 2004/108/EC.

#### DENON EUROPE

Division of D&M Germany GmbH An der Landwehr 19, Nettetal, D-41334 Germany

#### A NOTE ABOUT RECYCLING:

This product's packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with the local recycling regulations.

When discarding the unit, comply with local rules or regulations.

Batteries should never be thrown away or incinerated but disposed of in accordance with the local regulations concerning battery disposal.

This product and the supplied accessories, excluding the batteries, constitute the applicable product according to the WEEE directive.

#### HINWEIS ZUM RECYCLING:

Das Verpackungsmaterial dieses Produktes ist zum Recyceln geeignet und kann wieder verwendet werden. Bitte entsorgen Sie alle Materialien entsprechend der örtlichen Recycling-Vorschriften. Beachten Sie bei der Entsorgung des Gerätes die örtlichen Vorschriften und Bestimmungen.

Die Batterien dürfen nicht in den Hausmüll geworfen oder verbrannt werden; bitte entsorgen Sie die Batterien gemäß der örtlichen Vorschriften.

Dieses Produkt und das im Lieferumfang enthaltene Zubehör (mit Ausnahme der Batterien!) entsprechen der WEEE-Direktive.

#### UNE REMARQUE CONCERNANT LE RECYCLAGE:

Les matériaux d'emballage de ce produit sont recyclables et peuvent être réutilisés. Veuillez disposer des matériaux conformément aux lois sur le recyclage en vigueur.

Lorsque vous mettez cet appareil au rebut, respectez les lois ou réglementations en vigueur.

Les piles ne doivent jamais être jetées ou incinérées, mais mises au rebut conformément aux lois en vigueur sur la mise au rebut des piles.

Ce produit et les accessoires inclus, à l'exception des piles, sont des produits conformes à la directive DEEE.

#### NOTA RELATIVA AL RICICLAGGIO:

I materiali di imballaggio di questo prodotto sono riutilizzabili e riciclabili. Smaltire i materiali conformemente alle normative locali sul riciclaggio.

Per lo smaltimento dell'unità, osservare le normative o le leggi locali in vigore.

Non gettare le batterie, né incenerirle, ma smaltirle conformemente alla normativa locale sui rifiuti chimici. Questo prodotto e gli accessori inclusi nell'imballaggio sono applicabili alla direttiva RAEE, ad eccezione delle batterie.

#### ACERCA DEL RECICLAJE:

Los materiales de embalaje de este producto son reciclables y se pueden volver a utilizar. Disponga de estos materiales siguiendo los reglamentos de reciclaje de su localidad.

Cuando se deshaga de la unidad, cumpla con las reglas o reglamentos locales.

Las pilas nunca deberán tirarse ni incinerarse. Deberá disponer de ellas siguiendo los reglamentos de su localidad relacionados con los desperdicios químicos.

Este producto junto con los accesorios empaquetados es el producto aplicable a la directiva RAEE excepto pilas.

#### EEN AANTEKENING MET BETREKKING TOT DE RECYCLING:

Het inpakmateriaal van dit product is recycleerbaar en kan opnieuw gebruikt worden. Er wordt verzocht om zich van elk afvalmateriaal te ontdoen volgens de plaatselijke voorschriften.

Volg voor het wegdoen van de speler de voorschriften voor de verwijdering van wit- en bruingoed op.

Batterijen mogen nooit worden weggegooid of verbrand, maar moeten volgens de plaatselijke voorschriften betreffende chemisch afval worden verwijderd.

Op dit product en de meegeleverde accessoires, m.u.v. de batterijen is de richtlijn voor afgedankte elektrische en elektronische apparaten (WEEE) van toepassing.

#### **OBSERVERA ANGÅENDE ÅTERVINNING:**

Produktens emballage är återvinningsbart och kan återanvändas. Kassera det enligt lokala återvinningsbestämmelser.

När du kasserar enheten ska du göra det i överensstämmelse med lokala regler och bestämmelser.

Batterier får absolut inte kastas i soporna eller brännas. Kassera dem enligt lokala bestämmelser för kemiskt avfall. Denna apparat och de tillbehör som levereras med den uppfyller gällande WEEE-direktiv, med undantag av batterierna.









Pb

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#### Playback

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| Universal Blu-ray Disc player that plays Super<br>Audio CD and DVD-Audio formats  | After reading them, be sure to keep them for future reference.  |
|---|---|
| DENON LINK 4th and HDMI transmission technology       GUI installed with excellent operability and use the litered.         In addition to multi-channel digital balance transmission of Super       GUI installed with excellent operability and use the litered.  | Check that the following parts are supplied with the product  |
| Audio CD that was achieved in 3rd , DENON LINK 4th provides<br>the jitter control functionality during digital signal transmission.<br>Page 18 "DENON LINK Connection ① Making a Jitter-free  | <ol> <li>Owner's manual</li> <li>Service station list</li> <li>Power cord (Cord length: Approx. 1.5 m)</li> <li>Remote control (RC-1110)</li> </ol>   |
| Connection"<br>The decoder handles Dolby TrueHD and DTS-HD<br>Master Audio, of course, as well as Dolby Pro   | <ul> <li>§ R6/AA batteries</li> <li>(6) DENON LINK cable (Cord length: Approx. 1.5 m)</li> <li>(7) Audio cable (Cord length: Approx. 1.5 m)</li> <li>(8) Video cable (Cord length: Approx. 1.5 m)</li> <li>(3) (4)</li> </ul> |
| Logic IIx and DTS Neo:6 decoding<br>Compatible with Linear PCM 192 kHz (one of the BD audio<br>formats) and multi-channel output (6-ch).<br>To page 18 "Connecting to a Device with an Analog Multi-<br>channel Audio Input Terminal"   |   |
| <ul> <li>2-channel analog fully balanced transmission circuit installed</li> <li>By combining with the AVP-A1HD/POA-A1HD, balanced transmission is enabled from the player's D/A converter up to power amp amplification level.</li> <li>Topage 20 "Connecting to a Device with Analog 2-channel Audio Input Terminal with Balanced Cable"</li> </ul> |   |

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# **Cautions on Handling**

#### · Before turning the power switch on

Check once again that all connections are correct and that there are no problems with the connection cables.

• Power is supplied to some of the circuitry even when the unit is set to the standby mode. When traveling or leaving home for long periods of time, be sure to unplug the power cord from the power outlet.

#### • Image persistence (image burn-in)

Do not leave the still images of the disc menu, DVD-A1UD menu, etc., displayed on the TV screen for long periods. This can result in image persistence (image burn-in) on the screen.

#### About Condensation

If the DVD-A1UD unit is moved from a cold place to a warm place, or installed in a room subject to rapid temperature rise from a heater, etc., condensation (dew) may form on the internal parts of the unit (operating parts and lenses).

If used in this condition, the DVD-A1UD will not operate correctly and damage may result. If condensation is formed on the unit, leave the DVD-A1UD unit for1 to 2 hours with the power OFF before use.

#### • Cautions on using mobile phones

Using a mobile phone near this unit may result in noise. If so, move the mobile phone away from this unit when it is in use.

#### • Moving the unit

Be sure to remove a disc, turn off the power and unplug the power cord from the power outlet. Next, disconnect the connection cables to other system equipment before moving the unit.

#### About Care

- Wipe the cabinet and control panel clean with a soft cloth.
- Follow the instructions when using a chemical cleaner.
- Benzene, paint thinner or other organic solvents as well as insecticide may cause material changes and discoloration if brought into contact with the unit, and should, therefore, not be used.

#### Sufficiently ventilate the place of installation

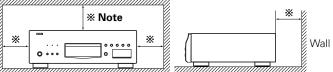
If the unit is left in a room full of the smoke from cigarettes, etc., for long periods of time, the surface of the optical pickup could get dirty, in which case it will not be able to read the signals properly.

• Note that the illustrations in these instructions may differ from the actual unit for explanation purposes.

#### **Cautions on Installation**

#### Note:

For proper heat dispersal, do not install this unit in a confined space, such as a bookcase or similar enclosure.



Do not place the DVD-A1UD on an amp or other piece of equipment that generates heat.

# **About Media**

#### **Playable Media**

#### Discs

| Discs                   |                             |                               |                          |   |  |
|-------------------------|-----------------------------|-------------------------------|--------------------------|---|--|
| Playable Media          |                             | Playable<br>formats/<br>modes | Playable<br>region codes | Symbols<br>Used<br>in this<br>Owner's<br>Manual |  |
| BD-Video<br>*1,*2       | <b>B</b> iluray Disc        | _                             | Include region           | BD  |  |
| DVD-Audio<br><b>*</b> 1 |                             |                               | _                        | DVD-A   |  |
| DVD-Video<br>*1,*2      | VIDEO                       | -                             | Include region           | DVD-V   |  |
| DVD-R,<br>DVD+R         |                             | Video                         |                          |   |  |
| DVD-RW,<br>DVD+RW       |                             | mode,<br>AVCHD<br>format      | _                        | DVD   |  |
| Super Audio<br>CD       | SUPER AUDIO CD              | -                             | _                        | SA-CD   |  |
| CD                      |                             |                               |                          |   |  |
| CD-R                    |                             | -                             | -                        | CD  |  |
| CD-RW                   | DIGITAL AUDIO<br>ReWritable |                               |                          |   |  |

- \*1: BD-Video/DVD-Audio/DVD-Video discs may not operate as described in this manual due to menu structure.
- \*2: The BD player and BD-Video disc, and DVD player and DVD-Video disc each have their region codes (code assigned for each region). Playback is not possible if the codes do not match.

**Getting Started** 

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# NOTE

- A disc may not be accessible or play back incorrectly due to audio and video interruptions, etc., depending on the recording conditions when recorded with a BD recorder or DVD recorder.
- Unfinalised DVD-R/-RW/+R/+RW, and CD-R/-RW discs may not play back. Finalise discs before playing.
- The following discs will not play back on this unit.
- BD-RE Ver1.0 (BD disc with cartridge)
- BD-ROM/BD-R/BD-RE discs containing recorded movie, still image, audio, etc., files
- BD-R/BD-RE in which BDMV/BDAV is recorded
- HD DVD
- DVD-RAM
- CDV (Only the audio part can be played)
- CD-G (Only the audio signals can be output)
- Non-standard CD (CD with copy protection, etc.)
- Unauthorised disc (Pirated disc)
- Disc with recording area less than 55 mm in diameter
- Video Single Disc (VSD) / CVD/ Video CD / Super Video CD / CompactDisc-Interactive (CD-I) / Photo CDs



| Playable cards                          | Symbols<br>Used<br>in this<br>Owner's<br>Manual | Playable files<br>(Symbols Used in this<br>Owner's Manual)     |
|---|---|--|
| SD Memory Card<br>(8 MB ~ 2 GB)         |   | MP3 WMA AAC LPCM   |
| SDHC Memory Card *1<br>(4 GB)           | SD  | <b>JPEG DivX</b><br>• Data recorded for BD BONUS               |
| miniSD Card <b>*</b> 2<br>(8 MB ~ 2 GB) |   | VIEW use<br>· See "Files" in "Playable<br>Modia" (See a files) |
| microSD Card <b>*2</b><br>(8 MB ~ 2 GB) |   | Media" (     regrage 4) for more information on files.         |

- \*1: This unit supports SD Memory Card with FAT16 file system, and SDHC Memory Card with FAT32 file system.
- \*2: For miniSD Card and microSD Card adapter is necessary.



#### NOTE

- This unit does not support mini SDHC and micro SDHC Memory Card.
- Insert or remove a SD Memory Card while the power is in standby. If you insert a SD Memory Card while the power is ON, the SD Memory Card may not be read.
- The SD card used for the Bonus View function must have a capacity of 1GB or greater. Also the SD card must be initialized on the DVD-A1UD (2 page 32).

|                                   | Playable  | e Media                     |  | Symbols                              |
|-----------------------------------|---|-----------------------------|--|--------------------------------------|
| Playable<br>files<br>(Extension)  | DVD-R/<br>-RW/<br>+R/+RW<br>CD-R/-RW<br>DVD<br>CD | SD<br>Memory<br>Cards<br>SD | File specification   | Used<br>in this<br>Owner's<br>Manual |
| MP3<br>(.mp3)                     | 0   | 0                           | Sampling frequency:<br>44.1 kHz, 48 kHz     Bit rate:<br>64 kbps ~ 320 kbps<br>(144 kbps<br>non-compatible)     Audio type:<br>MPEG 1 Audio Layer 3                            | MP3                                  |
| WMA <b>*</b><br>(.wma)            | 0   | 0                           | <ul> <li>Sampling frequency:</li> <li>44.1 kHz, 48 kHz</li> <li>Bit rate:</li> <li>48 kbps ~ 192 kbps</li> <li>Audio type:</li> <li>WMA Version 9</li> </ul>                   | WMA                                  |
| AAC <b>*</b><br>(.m4a)            | 0   | 0                           | <ul> <li>Sampling frequency:<br/>44.1 kHz, 48 kHz</li> <li>Bit rate:<br/>64 kbps ~ 192 kbps<br/>(Variable Bit Rate non<br/>compatible)</li> <li>Audio type:<br/>AAC</li> </ul> | AAC                                  |
| LPCM<br>(.wav)                    | 0   | 0                           | <ul> <li>Sampling frequency:<br/>44.1 kHz, 48 kHz</li> <li>Bit length: 16 bit</li> <li>Number of channels: 2 ch</li> </ul>   | LPCM                                 |
| JPEG<br>(.jpg/.jpeg)              | 0   | 0                           | <ul> <li>Maximum resolution:<br/>4,096 x 4,096 pixels</li> <li>Minimum resolution:<br/>32 × 32 pixels</li> <li>Maximum file size: 12 MB</li> </ul>                             | JPEG                                 |
| DivX <sup>®</sup><br>(.avi/.divx) | 0   | 0                           | <ul> <li>Compatible versions:<br/>Up to DivX<sup>®</sup> 6</li> <li>Maximum size: 2 GB</li> </ul>  | DivX                                 |

\* : This unit cannot play back files recorded under DRM (Digital Rights Management) other than DivX<sup>®</sup> files.

#### Ø

microSD Card

**F**:1 - -

- The abovementioned file type may also fail to play back depending on conditions at the time of recording.
- If characters not supported on the menu screen are included in a file name, title, artist name or album title, those are not displayed correctly.
- JPEG format images stored in progressive format cannot be played back.

# 

Connections

Setup

Playback

**About Media** 

#### About DivX<sup>®</sup> Video-on-Demand (VOD)

When you purchase or rent a DivX<sup>®</sup> file through the official site of DivX<sup>®</sup> Video-On-Demand (VOD) services, a DVD-A1UD registration code is required. For details, see "DivX<sup>®</sup> Registration" (127) page 31).

This player is not authorized to play this <u>video.</u>

View DivX(R) VOD Rental This rental has 3 views left Do you want to use one of your 3 views now?

Yes

ОК

**DivX Rental** 

No

- A DivX<sup>®</sup> VOD file recorded with a different code from the DVD-A1UD registration code cannot be played back.
- Some DivX<sup>®</sup> VOD files are restricted with limited playable times. If your DivX<sup>®</sup> VOD file has such a limit, the number of playable times is displayed on the DivX<sup>®</sup> VOD display screen.

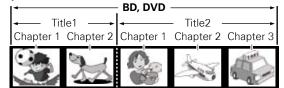
Use to select "Yes" if you want to play back the file, or to select "No" if you do not want to play it back. The press to confirm the selection.

#### **About Discs and Files**

#### BD-Video, DVD-Video

BD/DVD-Video discs are divided into several large sections (titles) and small sections (chapter). These sections are all allotted numbers, called the title numbers and chapter numbers.

#### [Example]

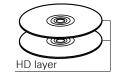


# Super Audio CD [Type of Super Audio CD]

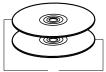
Single layer disc



Dual layer disc



#### • Hybrid disc



Two-layer Super Audio CD with an HD layer \* and a CD layer. The signals on the CD layer can be played on a regular CD player.

Single layer Super Audio CD with

Super Audio CD with a double HD

layer \*, offering extended playing

time and high sound quality.

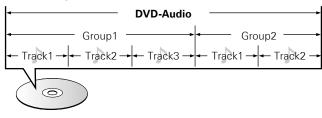
only an HD layer \*.

CD layer HD layer

 All Super Audio CDs contain an HD (High Density) layer with high density Super Audio CD signals. This layer can contain a stereo channel area, a multi-channel area, or both a stereo channel and multi-channel area.

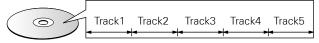
#### DVD-Audio

DVD-Audio discs are divided into several large sections (groups) and small sections (tracks). These sections are all allotted numbers, called the group numbers and track numbers.



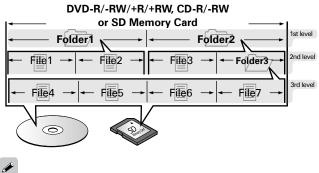
#### 🗆 CD

CDs are divided into several sections (tracks). These sections are all allotted numbers, called the track numbers.



#### 🗅 File

MP3/WMA/AAC/LPCM/JPEG/DivX<sup>®</sup> files recorded on DVD-R/-RW/ +R/+RW, CD-R/-RW and SD Memory Card are divided into large segments (folders) and small segments (files). Files are stored in folders, and folders can be placed for storage in a hierarchy. The DVD-A1UD can recognize up to 8 hierarchies of folder.



When writing MP3/WMA/AAC/JPEG/DivX<sup>®</sup> files on a CD-R/-RW disc, set the writing software's format to "ISO9660". The files may not play properly if they are recorded in other formats. For details, refer to the instructions of your writing software.

Specifications

# **Cautions on Using Media**

#### Inserting a Disc

- Set the disc with the labeled side facing up.
- Make sure the disc trav is fully open when inserting the disc.
- Place the disc horizontally in the tray, aligned with the tray guide.

# *i*

If a disc that cannot be played is loaded or the disc is loaded upsidedown, "NO DISC" is displayed on the player's display.

#### NOTE

- Only load one disc at a time. Loading two or more discs can damage the unit or scratch the discs.
- Do not use cracked or warped discs or discs that have been repaired with adhesive, etc.
- Do not use discs on which the sticky part of cellophane tape or labels is exposed or on which there are traces of where labels have been removed. Such discs can get caught inside the player and damage it.
- Do not use discs with special shapes, as they could damage the player.



• Do not push the disc tray in by hand when the power is turned off. Doing so could damage the set.

#### **Inserting an SD Memory Card**

. Insert an SD Memory Card in the direction of the arrow into the SD CARD slot with the label facing up.



- Insert the card straight into SD CARD slot until it clicks.
- To remove the card, push it in the direction of insertion, and then release to eject.

#### About Handling of Media

- Do not get fingerprints, oil or dirt on discs.
- Take special care not to scratch discs when removing them from their cases.
- Do not bend or heat discs.
- Do not enlarge the hole at the center.
- Do not write on the labeled (printed) surface with ball-point pens, pencils, etc., or stick new labels on discs.
- Water droplets may form on discs if they are moved suddenly from a cold place (outdoors for example) to a warm place, but do not try to dry them off using a hairdryer, etc.
- Do not eject an SD Memory Card or turn off the DVD-A1UD's power while the card content is in playback. This may result in malfunction or loss of the card's data.
- Do not attempt to open or modify SD Memory Cards.
- SD Memory Cards and files can be damaged by static electricity. Do not touch the metal contacts of an SD Memory Card with your finaers.
- Do not use warped SD Memory Cards.
- After use, be sure to remove any disc or SD Memory Card, and store it in its proper card case, to avoid dust, scratches and deformation.
- Do not store discs in the following places:
- 1. Places exposed to direct sunlight for long periods of time 2.Dustv or humid places

3. Places exposed to heat from heating appliances, etc.

#### Cleaning Discs

- If there are fingerprints or dirt on discs, wipe them off before using the disc
- Use a commercially available disc cleaning set or a soft cloth to clean discs.





Gently wipe the disc from the inside towards the outside.

Do not wipe with a circular motion.

#### NOTE

Do not use record spray, antistatic agents, or benzene, thinner or other solvents.

#### About Copyright

- Unauthorised copying, broadcasting, public performance and lending of discs are prohibited.
- This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights.
- Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.
- Portions of this product are protected under copyright law and provided under license by ARIS/SOLANA/4C.



Connections

Setup

# **About the Remote Control Unit**

# **Inserting the Batteries**

① Remove the remote control ② Set three R6/AA batteries in unit's rear cover. the battery compartment in the



indicated direction. Batteries

NOTE

liaht.

#### (3) Put the rear cover back on.

#### NOTE

- Use R6/AA batteries in this remote control.
- Replace the batteries with new ones if the set does not operate even when the remote control unit is operated close to the unit. (The supplied batteries are only for verifying operation.)
- When inserting the batteries, be sure to do so in the proper direction. following the " $\oplus$ " and " $\Theta$ " marks in the battery compartment.

• To prevent damage or leakage of battery fluid: Do not use a new battery together with an old one. Do not use two different types of batteries.

Do not attempt to charge dry batteries.

Do not short-circuit, disassemble, heat or dispose of batteries in flames.

- If the battery fluid should leak, carefully wipe the fluid off the inside of the battery compartment and insert new batteries.
- Remove the batteries from the remote control unit if it will not be in use for long periods.
- Used batteries should be disposed of in accordance with the local regulations regarding battery disposal.

# **Operating Range of the Remote Control** Unit

Point the remote control unit at the remote sensor when operating it.

The set may function improperly or the remote control unit may not

operate if the remote control sensor is exposed to direct sunlight,

strong artificial light from an inverter type fluorescent lamp or infrared

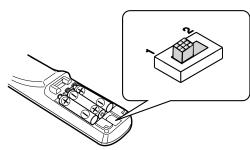
# 6 0

Approx. 7 m

#### **Remote Control Settings (Remote Control Side**)

#### Switches when the DVD-A1UD's remote control operates another DENON BD players in the vicinity.

Set the remote control code simultaneously on the main unit, too. For how to set codes, see GUI menu: "Other Setup" - "Remote Control Setting" - "Remote ID" (12 page 32).



#### [Remote control code setting]

- : Set the remote control code to "1". 1
- : Set the remote control code to "2". 2

• If the signal code of the remote control does not match the signal code of the unit, the remote control code set on the unit is shown on the display.

#### [Example]

If the code setting on the unit is "DENON 1", and the setting on the remote control is "2", "PLAYER 1" is shown on the display.

#### NOTE

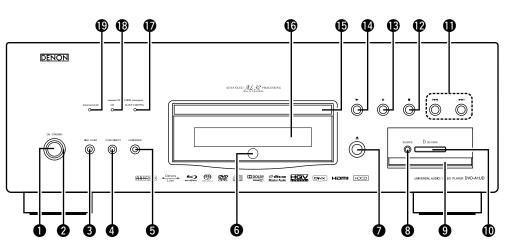
- Match the signal code of the remote control with the signal code of the unit. If the remote control code is different, you cannot operate the DVD-A1UD with the remote control.
- Even if you change the remote control code, set GUI menu "Other Setup" - "Remote Control setting" - "Receive Legacy Remocon" (C page 32) to "Off" when operating the DVD-A1UD with a remote control other than DENON's.



# **Part Names and Functions**

# **Front Panel**

For buttons not explained here, see the page indicated in parentheses ().



| Power operation button     (ON/STANDBY)                               |
|---|
| <b>2</b> Power indicator(22)  |
| <b>3</b> DISC LAYER button (39)                                       |
| <b>4</b> PURE DIRECT button (40)                                      |
| <b>5</b> HDMI MODE button(13)   |
| <b>6</b> Remote control sensor (7)                                    |
| ⑦ Disc tray open/close button (▲) ··································· |
| <b>3 SOURCE button</b> (36)   |
| 9 SD door   |
|   |

Lightly push the lower side of the door to open the door.

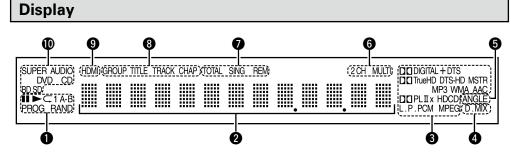


#### NOTE

Be careful not to catch your finger in the door.

| <b>(</b> 6) <b>SD CARD slot</b>  |
|--|
| Revers-skip/Forward-skip buttons     (I◄◄, ►►I)  |
| (10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10)<br>(10) |
| Pause/Still button (II)  |
| Play button (►)  |
| <b>(b</b> ) Disc tray  |
| <b>(</b> B) <b>Display</b>   |
| CLOCK CONTROL indicator (18, 30)<br>Lights when playing BD with DENON LINK 4th<br>(jitter free) connections.   |
| DENON LINK indicator   |
| ADVANCED AL32 indicator  |

When power is in standby mode, press **7** and **4** to turn the power on.



#### **1** Playback mode indicators

► : During Playback ■ : During pause and step-by-step playback **PROG** : During program playback **RAND** : During random playback **C1 A-B** : During repeat playback

#### **2** Information display

Displays various information or playback elapsed time and so on of the disc.

#### **③** Playback format indicators

#### **4** Downmix indicator

Displayed when playing back downmix permitted audio.

#### **5** Angle information indicator

Displayed when a scene on the currently playing disc has been shot at various angles.

#### **6** Audio channel indicators

Displays the number of audio signal channels during playback. 2CH : 2-channel playback **MULTI** : Multi-channel playback

#### **7** Time mode indicators

**TOTAL**: Total time of Super Audio CD and CD

- SING : Elapsed time of title/chapter/track/file being played back
- **REM** : Remaining time of title/chapter/track/file being played back

#### Group/Title/Track/Chapter indicators

#### **9** HDMI output indicator

Display when HDMI video or audio signals are being output.

# ø

Does not display when the HDMI cable is not correctly connected and when the HDMI connection is not verified.

#### Media indicators

BD : BD DVD : DVD-Video, DVD-R/+R/-RW/+RW DVD AUDIO : DVD-Audio **SUPER AUDIO CD** : Super Audio CD **CD** : CD SD : SD Memory Card Displays the inserted media.

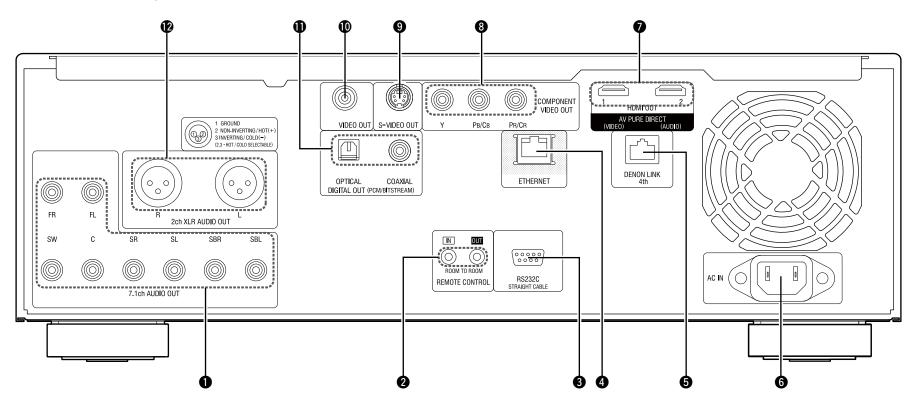
Connections

Setup

Playback

#### **Rear Panel**

For buttons not explained here, see the page indicated in parentheses ().



#### **1** 7.1ch AUDIO OUT connectors .....(18)

**2** ROOM TO ROOM IN/OUT jacks

Extension jacks for future use.

8 RS-232C connector

Extension connector for future use.

| <b>4</b> ETHERNET connector (21)         |
|--|
| <b>DENON LINK 4th connector</b> (18, 19) |
| <b>6</b> AC inlet (AC IN) (22)           |

**White** OUT connectors (13, 14) Signals output from each terminal change depending on the HDMI mode setting.
 **COMPONENT VIDEO OUT connectors** (19)
 **S-VIDEO OUT connector** (19)
 **VIDEO OUT connector** (19)
 **WIDEO OUT connector** (19)
 **DIGITAL OUT OPTICAL/COAXIAL connectors** (17)
 **2ch XLR AUDIO OUT connectors** (20) For software recorded in multi-channel, analog signals that have

been down-mixed into 2 channels are output.

#### NOTE

Do not touch the inner pins of the connectors on the rear panel. Electrostatic discharge may cause permanent damage to the unit.
Do not put your finger or foreign object in the fan opening. Doing so could cause injury or unit failure.

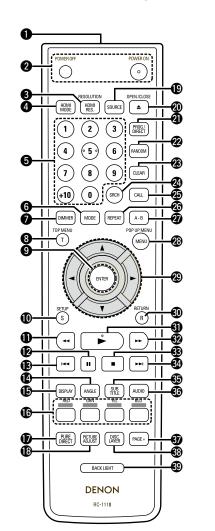
Connections

Setup

Playback

#### **Remote Control Unit**

For buttons not explained here, see the page indicated in parentheses ( ).



| Remote control signal transmitter ······(7)      |  |
|--|--|
| POWER buttons (POWER OFF, POWER ON)(22)          |  |
| <b>3 HDMI RESOLUTION button (HDMI RES.)</b> (15) |  |
| HDMI MODE button ·····(13)                       |  |
| <b>③</b> Number buttons (0 ~ 9, +10)             |  |
| <b>6</b> MODE button (33)                        |  |
| <b>O</b> DIMMER button (49)                      |  |
| <b>③ TOP MENU button (T)</b> (37)                |  |
| <b>9</b> ENTER button (24)                       |  |
| <b>(2</b> 3) <b>(2</b> 3)                        |  |
| <b>①</b> Fast-reversing button (◄◄)······(45)    |  |
| <b>Pause/Still button (II)</b> (43, 45)          |  |
| B Revers-skip button (I◄◄)······(43)             |  |
| ANGLE button     (49)                            |  |
| <b>(</b> B DISPLAY button (36)                   |  |
| BED/GRN/YEL/BLU buttons                          |  |
| <b>D</b> PURE DIRECT button (40)                 |  |
| B PICTURE ADJUST button (35)                     |  |
| (36) SOURCE button                               |  |
| ② Disc tray OPEN/CLOSE button (▲) ·······(36)    |  |
| PROGRAM/DIRECT button (PROG/DIRECT)     (47)     |  |
| RANDOM button     (46)                           |  |
| <b>3</b> CLEAR button (35)                       |  |
| SEARCH button (SRCH)     (39)                    |  |
| CALL button (47)                                 |  |

| REPEAT button (46)   |
|--|
| ② A-B button   |
| MENU/POP UP MENU button ······(37)                         |
| ② Cursor buttons (△▽⊲▷)                                    |
| RETURN button (R)     (24)                                 |
| ④ Play button (►) ······(39)                               |
| <b>2</b> Fast-forwarding button (►►)                       |
| ③ Stop button (■)······(43)                                |
|  |
| G SUBTITLE button (48)                                     |
| AUDIO button   |
| <b>③</b> PAGE + button                                     |
| DISC LAYER button     (39)                                 |
| BACK LIGHT button  |
| When pressing a button, backlight is turned ON for about 8 |

# Press once again to turn off.

ø

seconds except the button 39.

• When power is in standby, press 🕲 and 🕄 to turn the power on.

• You can use () when operating the BD popup menu screen, etc.

Sta

Connections

Setup

Playback

**HDMI** Control Function

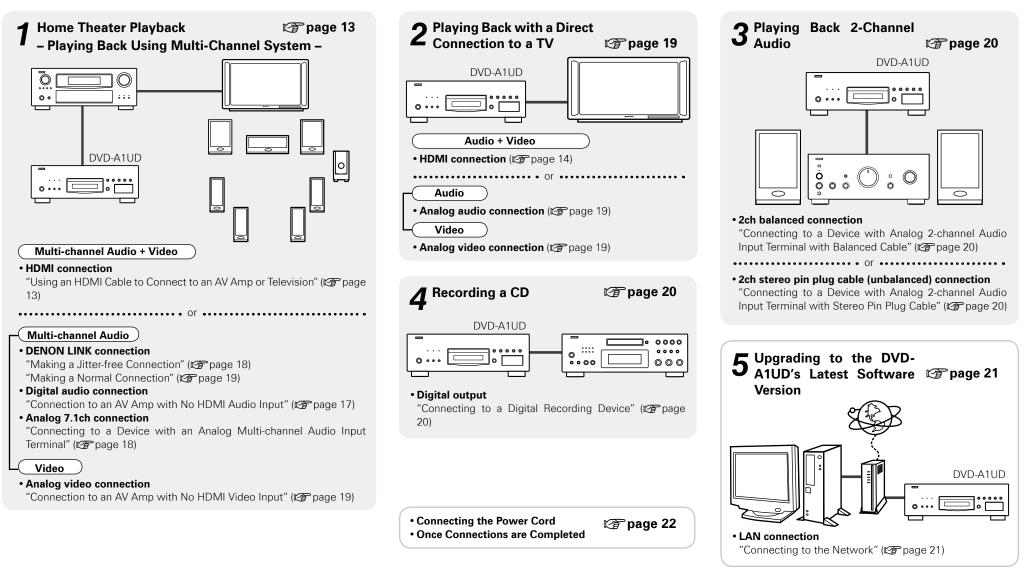
Information

Troubleshooting

Specifications

# Connections

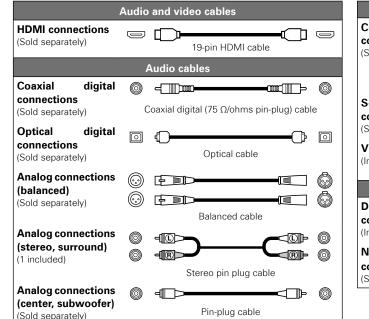
Connect the DVD-A1UD as follows before using. Make connections according to the equipment you are connecting. Some DVD-A1UD settings may be necessary depending on the connection method. Check each connection item for more information.

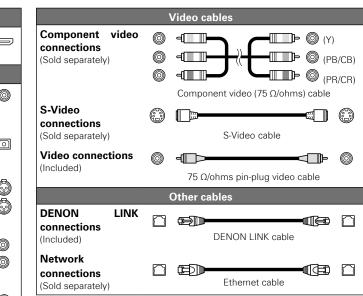


# Preparation

#### **Cables Used for Connections**

Prepare the cables to match the devices you are to use.





#### NOTE

*(* 

- Do not plug the power cord into the power outlet until all connections are completed.
- Be sure to read the owner's manuals for the connected devices.
- First check the connection channels, and then correctly connect the input and output channels.
- Do not bundle the power cord together with the connection cables. This can result in noise.

• Use only HDMI (High Definition Multimedia Interface) cable that bears the HDMI logo (genuine HDMI product). Using cable without the HDMI logo (non-genuine HDMI product) may result in abnormal playback.

• When outputting deep colour or 1080p, etc., we recommend you use High Speed HDMI cable for enhanced high-quality playback.

# 1. Home Theater Playback – Playing Back Using Multi-channel System –

#### Using an HDMI Cable to Connect to an AV Amp or Television

• There are 5 ways to connect (1 – 5) using HDMI cable (sold separately). Configure appropriate connection for HDMI mode first and then set HDMI mode using (HMM).

- When connecting with HDMI cable, perform the settings in "Required Settings for HDMI Connection" (mp page 15).
- DVD-A1UD automatically detects audio/video signal supported by the connected HDMI device and outputs the signal. To change the setting, see "HDMI Setup" on the GUI menu (Page 25, 26).

| HDMI mode                                 |  | Output signal fro | om each terminal |
|---|--|-------------------|------------------|
|   |  | HDMI OUT 1        | HDMI OUT 2       |
| ① HDMI Auto (Dual)<br>(HDMI Dual)         | Used for multi-channel playback using 2 devices.   | Video + Audio     | Video + Audio    |
| ② HDMI Auto (Independent)<br>(HDMI Inde.) | Used for multi-channel playback using one device and 2-channel playback using the other unit. (*1)                   | Video + Audio     | Video + Audio    |
| ③ AV Pure Direct<br>(AV P.Direct)         | Used for the highest<br>quality playback using<br>different HDMI cables to<br>connect video and audio<br>separately. | Video             | Audio            |
| ④ HDMI1                                   | Used for connecting only   | Video + Audio     | Does not output  |
| 5 HDMI2                                   | 1 device.  | Does not output   | Video + Audio    |
| 6 HDMI Off                                | Used when HDMI connection is not used.   | Does not output   | Does not output  |

\*1 : If the number of channels supported by 2 devices is the same, multi-channel audio is output to both devices.

#### NOTE

To disable video or audio output from the HDMI terminal, set "Video Out" of "Pure Direct Setup", which outputs high quality analog audio to "Off". To enable the HDMI signal output, set the Pure Direct mode to one of the following setting:

- Pure Direct mode "Off" or "User Preset 1" or "User Preset 2" (\*)
- ("Playing Back High-Quality Audio (Pure Direct Function) " 🕼 page 40)
- \*\* Do this after setting "Pure Direct Setup" "User Preset 1" or "User Preset 2" "Video Out" on GUI menu to "On" (1) page 30).

#### Default settings are underlined.

# Video and Audio Output Signal when Outputting to 2 HDMI Devices (HDMI Auto (Dual) Mode and HDMI Auto (Independent) Mode)

#### □ About Video Signal

When "About HDMI Video Resolution Setting" (2 page 15) is set to "Auto", of the resolution supported by both of the 2 connected devices, the DVD-A1UD outputs the highest resolution video signal to both devices.

#### About Audio Signal

- (1) Check audio signals that can be input by the device to be connected.
  - Audio format .......Bit stream (Dolby Digital, DTS etc.), Linear PCM, etc.
  - Number of channels

#### (2) About number of output channels of multi-channel audio

When outputting bitstream signals to two HDMI devices, the signals are output to both HDMI devices if they both support bitstream signals. Of only one device support bit stream, LPCM is output to the device, which does not support bit stream.

When outputting LPCM signals to two HDMI devices, it is not possible to output multi-channel audio signals with different numbers of channels to the two HDMI devices.

When the number of channels of multi-channel audio supported by the connected 2 HDMI devices are different, the audio signal output to each mode becomes as follows:

#### • HDMI Auto (Dual) :

Outputs multi-channel audio of less number of channels to both devices.

If the supported number of channels is 7.1 channel and 5.1 channel, respectively, 5.1 channel audio is output. If the supported number of channels is multi-channel and 2-channel (or 2.1-channel), multi-channel and 2-channel are output.

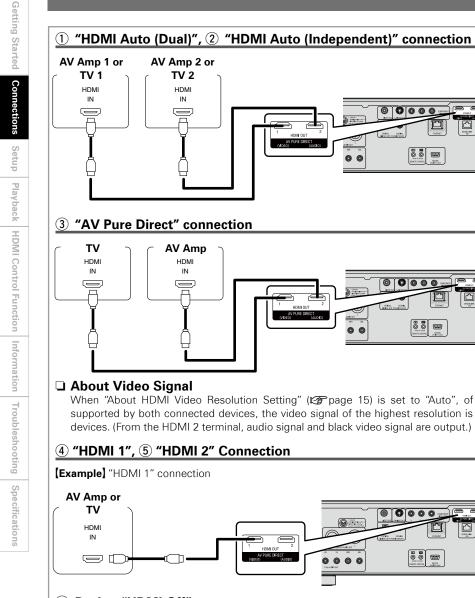
#### • HDMI Auto (Independent) :

Multi-channel audio is output as is to the device, which supports more number of channels. LPCM audio of 2-channel is output to the other device.

We recommend you use this mode when outputting to both an AV Amp and TV.

#### □ About Audio Format to be Output

Audio format supported by 2 connected HDMI devices is output. When multi-channel audio is output, the output channel is as described above (2).



#### **Connection to a device with a DVI-D terminal**

If you use a HDMI/DVI-D conversion cable (sold separately), HDMI video signals are converted to DVI-D signals, enabling connection to a device with a DVI-D terminal.

#### NOTE

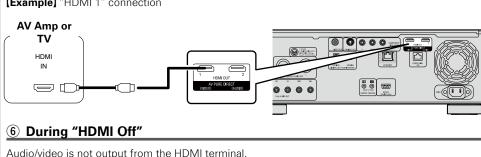
- In this case, the audio signal is not output. Make the appropriate audio connections for your devices. (CP page 15 ~ 21).
- The video signal will be in RGB format.
- You cannot output to a DVI-D device that does not support HDCP (high-bandwidth digital content copyright protection system).
- Video may not be output depending on the combination of devices.

When "About HDMI Video Resolution Setting" (@ page 15) is set to "Auto", of the resolution supported by both connected devices, the video signal of the highest resolution is output to both devices. (From the HDMI 2 terminal, audio signal and black video signal are output.)

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14

#### 1. Home Theater Playback – Playing Back Using Multi-channel System –

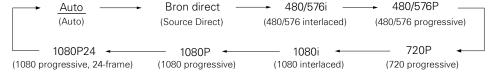
#### **Required Settings for HDMI Connection**

#### Setting HDMI Video Output

- Make HDMI Output Signal and HDMI Control Function Settings "HDMI Setup" (Page 25, 26)
- □ Make the Video Output Signal Setting for the Connected Television "Video Setup" (☞ page 26)

#### □ About HDMI Video Resolution Setting

• Change the HDMI video resolution by pressing (HESL). Switch the output mode as follows. Default settings are underlined.



- If the HDMI resolution is not set to "Auto", set it to correspond with the resolution of your television. Images will not be projected normally if the television resolution and DVD-A1UD's output resolution do not match.
- Audio and video will be temporarily interrupted if the power of the connected device currently playing back is turned off, or input is switched.
- When you change the HDMI video resolution of the DVD-A1UD, it takes from a few seconds up to about 10 seconds for validation between the DVD-A1UD and the connected device. Audio/video is not output during this period.
- When outputting deep colour or 1080p, etc., we recommend you use High Speed HDMI cable for enhanced high-quality playback.

#### NOTE

When the HDMI video resolution is set to "1080P24", HDMI video signals are output from the DVD-A1UD with a resolution of 1080P and a frame rate of 24 frames per second, regardless of the video signals on the disc being played. Because of this, when playing discs containing video signals recorded with a frame rate of something other than 24 frames per second, the movement of the picture may be unnatural. If this happens, set the HDMI video resolution to something other than "1080P24".

#### Setting HDMI Audio Output

- When you press 🔊 and set "HDMI Setup" "Audio Setup" to "Auto" (127 page 25) on the GUI menu, audio mode is set according to the connected device.
- When you want to set the HDMI audio output separately, change according to the following table.
- Refer to the owner's manual of the connected device regarding HDMI audio input specifications compatible with the connected device.

| Device to be connected  | Setting items        | About output signal and speaker settings   |
|---|----------------------|--|
| Device with the following<br>built-in decoder<br>• Dolby TrueHD<br>• Dolby Digital Plus<br>• Dolby Digital<br>• DTS-HD<br>• DTS | Auto                 | <ul> <li>DVD-A1UD outputs a bitstream signal that is decoded by the connected device.</li> <li>* In this case, you cannot make a speaker setting for HDMI audio with the DVD-A1UD.</li> <li>Make the setting with the connected device.</li> <li>* When outputting the Dolby TrueHD or DTS-HD audio, press more and set "BD Audio Mode" to "HD Audio Output" (129 page 33).</li> </ul> |
| Device compatible with<br>multi-channel HDMI audio<br>input, but not capable of<br>speaker setting for each<br>channel          | Multi LPCM<br>BM On  | <ul> <li>Outputs multi-channel Linear PCM audio signals with speaker setting by the DVD-A1UD.</li> <li>* For speaker setting, on the GUI menu, "Audio Setup" – "7.1ch Audio Out" – "Multi Channel" – "Speaker Configuration" (I page 27).</li> <li>* BM : Bass Management (means multi-channel speaker setting)</li> </ul>   |
| Device compatible with<br>multi-channel HDMI audio<br>input, and capable of<br>speaker setting for each<br>channel              | Multi LPCM<br>BM Off | Output of multi-channel Linear PCM audio signals from the<br>DVD-A1UD.<br>Perform the speaker setting with the connected device.<br><b>*</b> BM : Bass Management (means multi-channel speaker<br>setting)   |
| Device compatible with 2-<br>channel HDMI audio input   | 2ch                  | Downmixed 2-channel Linear PCM audio signals are output<br>from the DVD-A1UD.<br>Perform the speaker setting with the connected device.  |
| Device not compatible with<br>HDMI audio signal input   | Mute                 | Audio signal are not output from the DVD-A1UD's HDMI terminal.<br>Only video signals are output from the HDMI terminal.<br>* Make the audio connection.  |

Connections

#### □ Audio signal from the HDMI output terminal

You can change the audio format and playback number of channels according to the specifications of the device to which the DVD-A1UD's HDMI audio output signals are input. Make settings while checking the specifications of the audio device to be connected as well as the audio format/number of channels stored in media and files for playback.

| Media/Files               | Audio format       | Setting "HDMI Setup"<br>t | ′ – "Audio Setup″<br>he GUI menu | (🖅 page 25) on       |  |
|---------------------------|--------------------|---------------------------|----------------------------------|----------------------|--|
| inicala, i noo            |                    | Auto                      | Multi LPCM<br>BM On/Off          | 2ch                  |  |
|                           | Dolby Digital      | Dolby Digital <b>*</b> 1  |                                  |                      |  |
|                           | Dolby Digital Plus | Dolby Digital Plus * 1    |                                  |                      |  |
| BD                        | Dolby TrueHD       | Dolby TrueHD * 1          | – Multi I PCM                    | 2 ch Downmix         |  |
| DD                        | DTS                | DTS * 1                   |                                  | LPCM                 |  |
|                           | DTS-HD             | DTS-HD * 1                |                                  |                      |  |
|                           | LPCM               | Multi LPCM                |                                  |                      |  |
| AVCHD                     | Dolby Digital      | Dolby Digital             |                                  |                      |  |
| AVCHD                     | LPCM               | Multi LPCM                |                                  | 2 ch Downmix         |  |
|                           | Dolby Digital      | Dolby Digital             | Multi LPCM                       | LPCM                 |  |
| DVD-Video                 | DTS                | DTS                       |                                  |                      |  |
|                           | LPCM, MPEG         | 2 ch LPCM                 |                                  |                      |  |
| DVD-Audio                 | LPCM, PPCM         | – Multi I PCM             |                                  | 2 ch Downmix         |  |
|                           | Multi area         |                           |                                  | LPCM                 |  |
| Super audio CD <b>*</b> 2 | Stereo area        | 2 ch LPCM                 |                                  |                      |  |
|                           | CD layer           |                           |                                  |                      |  |
| DivX®                     | Dolby Digital      | Dolby Digital             | Multi LPCM                       | 2 ch Downmix<br>LPCM |  |
| MP3, MP2                  |                    | 2 ch l PCM                |                                  |                      |  |
| CD, MP3, WMA, AA          | C, LPCM            |                           |                                  |                      |  |
| DTS-CD                    |                    | DTS                       | Multi LPCM                       | 2 ch Downmix<br>LPCM |  |

\*1 : Multi LPCM signals are output when "BD Audio Mode" is set to "Mix Audio Output" (127) page 33). Multi LPCM signals are output when outputting HDMI video signals with resolutions of 480i/576i or 480p/576p.

\*2 : Super Audio CD audio signals are output at 44.1 kHz 16-bit.

#### 

Even if "HDMI Setup" – "Audio Setup" on the GUI menu is set to "Auto" (P page 25), multilinear PCM or downmixed 2-channel linear PCM signals are output if a device that does not support bitstreams is connected.

#### Copyright protection system

In order to play back digital video and audio such as BD-Video or DVD-Video via HDMI connection, both the player and TV or the AV Amp need to support the copyright protection system known as HDCP (High-bandwidth Digital Content Protection System). HDCP is copyright protection technology comprised of data encryption and authentication of the connected AV device. The DVD-A1UD supports HDCP.

#### NOTE

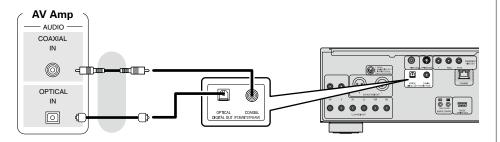
- If a device that does not support HDCP is connected, video and audio are not output correctly. Read the owner's manual of your television or AV Amp for more information.
- The audio signal from the HDMI output terminal (sampling frequency, number of channels, etc.) may be limited by the HDMI audio specifications of the connected device regarding permissible inputs. For example, if the HDMI audio specification of the connected device is 5.1 channels, 5.1-channel audio will be automatically output even when playing back 7.1 channels by the DVD-A1UD. In this case, analog audio output will also be 5.1-channel.
- Audio signal input may not be supported depending on the HDMI compatible monitor (projector, etc.) being used.

When the DVD-A1UD is connected to this kind of device, audio signals are not output from the HDMI terminal.

Getting

#### Connection to an AV Amp with No HDMI Audio Input

When playing back Dolby Digital Plus/Dolby TrueHD/DTS-HD audio recorded on a BD disc, the DVD-A1UD outputs Dolby Digital or DTS bitstream from its digital audio output terminal.



#### NOTE

• Dolby TrueHD/Dolby Digital Plus/DTS-HD audio signals are not output with this connection.

When outputting Dolby TrueHD/Dolby Digital Plus/DTS-HD audio signals, do so with an HDMI connection (1277 page 13, "Using an HDMI Cable to Connect to an AV Amp or Television").



- Super Audio CD's DSD signal cannot be output. Also, during CD layer playback, 44.1 kHz/16-bit Linear PCM is output.
- Do not output DTS audio signals to an AV Amp that does not support DTS. Playing back a BD/DVD disc with recorded DTS content can generate noise and even damage your speakers.
- When connecting with an optical transmission cable (sold separately), make sure the plug shape aligns with the socket, and insert fully.

#### Audio Signal from the Digital Audio Output (Optical/Coaxial) Terminal

The DVD-A1UD can convert and output digital audio signal format recorded on media. Convert the digital audio signal in accordance with the specifications of the device that is to input digital audio output signals from the DVD-A1UD.

| Media/Files         | Audio format       |                          | Digital Out″ (🕼 page 29) on<br>Ul menu |
|---------------------|--------------------|--------------------------|--|
| incula/Thes         | Auto format        | Bitstream                | PCM/PCM Down Sampling                  |
|                     | Dolby Digital      |                          |  |
|                     | Dolby Digital Plus | Dolby Digital <b>*</b> 1 |  |
| DD                  | Dolby TrueHD       |                          |  |
| BD                  | DTS                |                          |  |
|                     | DTS-HD             | - DTS * 1                |  |
|                     | LPCM               | 2 ch Downmix LPCM * 1    | 2 ch Downmix I PCM                     |
|                     | Dolby Digital      | Dolby Digital            |  |
| AVCHD               | LPCM               | 2 ch Downmix LPCM        |  |
|                     | Dolby Digital      | Dolby Digital            |  |
| DVD-Video           | DTS                | DTS                      |  |
|                     | LPCM, MPEG         | 2 ch Downmix I PCM       |  |
| DVD-Audio           | LPCM, PPCM         |                          |  |
|                     | Multi area         | Audio is not output      |  |
| Super Audio CD      | Stereo area        |                          |  |
|                     | CD layer           | 2 ch LPCM                |  |
| DivX®               | Dolby Digital      | Dolby Digital            | 2 ch Downmix LPCM                      |
| DivX® MP3, MP2      |                    |                          |  |
| CD                  |                    | 2 ch LPCM                |  |
| MP3, WMA, AAC, LPCM |                    |                          |  |
| DTS-CD              |                    | DTS                      | 2 ch Downmix LPCM<br>(DTS * 2)         |

\*1 : Bitstream signals are output in accordance with the BD re-encode setting when "BD Audio Mode" is set to "Mix Audio Output" (127) page 33).

\*2 :When "HDMI Setup" – "Audio Setup" is set to "Auto" on the GUI menu and bit stream is output from HDMI, the DTS bit stream is output from the digital audio output (optical/coaxial) as well.

#### 

For content with copyright protection, audio signal is down sampled to 48kHz 16bit and is output.

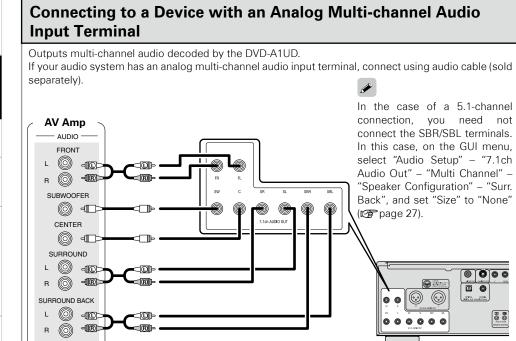
Getting Started

Connections

Setup

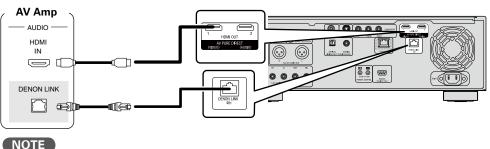
Playback

**HDMI Control Function** 



# DENON LINK Connection ① Making a Jitter-free Connection

When you connect the DVD-A1UD to a DENON LINK 4th compatible AV Amp using DENON LINK cable and HDMI cable, during BD playback the DVD-A1UD's circuit operates with the AV Amp's master clock signal. (The clock control indicator of the DVD-A1UD lights.) This enables transmission of high-quality digital audio with minimal jitter.



The jitter-free function does not work except during BD playback. In this case, the video signal is output from the HDMI OUT terminal, and the audio signal from the DENON LINK terminal.

Getting

Started

Connections

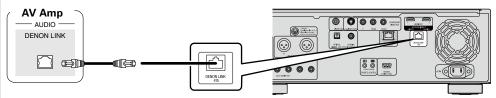
Setup

# DENON LINK Connection (2) Making a Normal Connection

• When connecting to a DENON LINK-compatible AV Amp, the multi-channel signals of DVD-Audio discs, Super Audio CDs, etc., can be transferred as such in digital format.

1. Home Theater Playback – Playing Back Using Multi-channel System –

- DENON LINK connection requires that the version of AV Amp to be connected match the DVD-A1UD version. Check the version of the AV Amp, and then on the GUI Menu, set "DENON LINK Setup" "DENON LINK Mode" (P page 30).
- If the DVD-A1UD and AV Amp versions do not match, audio cannot be output correctly.



## NOTE

DENON LINK does not support BD audio transmission.

# ø

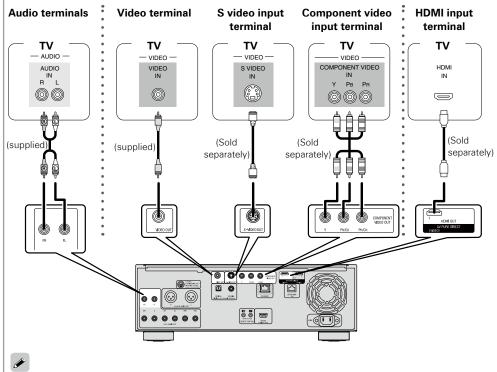
- DENON LINK supports digital transmission up to 24 bit/2 ch at 192/176.4 kHz, and up to 24 bit/6 ch at 96 kHz or less.
- When you have made a DENON LINK connection, the DVD-A1UD's speaker setting becomes invalid. (Make the speaker setting on the connected AV Amp)
- DENON LINK 2nd cannot transmit multi/stereo area audio of Super Audio CD.

# Connection to an AV Amp with No HDMI Video Input

Check the video terminals and make the connection to one of them.

# 2. Playing Back with a Direct Connection to a TV

Check the television's audio and video terminals and make the connection to one of them.



When outputting the DVD-A1UD's analog 2-channel audio to the television's 2-channel (stereo) audio input terminal, on the GUI menu, select "Audio Setup" – "7.1ch Audio Out", and set it to "2 Channel" (127 page 27).

#### NOTE

Do not connect the DVD-A1UD's video output via a VCR (Video Cassette Recorder). Some media contain copy prohibit signals, which will disturb the screen image.

When playing NTSC disc, DVD-A1UD's video output becomes NTSC signal format. When playing PAL disc, DVD-A1UD's video output becomes PAL signal format.

#### 2. Playing Back with a Direct Connection to a TV

#### **U** When connected to the television's component video input terminal

The DVD-A1UD's component video output supports 480i/576i/480p/576p/720p/1080i output. Match the output to the corresponding resolution of the connected television by setting, on the GUI menu: "Video Setup" – "Component Resolution" (Page 26). Images will not be projected normally if the television resolution and DVD-A1UD's output resolution do not match. Copyright protected DVD is output in 480i/576i or 480p/576p.

#### When connected to the HDMI input terminal

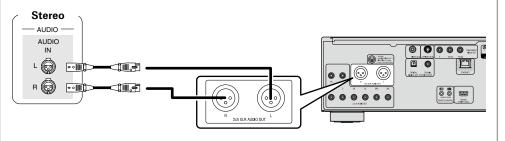
Outputting both digital video and digital audio signals.

See "Required Settings for HDMI Connection" (1277 page 15) for HDMI video output and audio output settings.

# 3. Playing Back 2-Channel Audio

#### Connecting to a Device with Analog 2-channel Audio Input Terminal with Balanced Cable

Select "Audio Setup" – "XLR" (12 page 30) from the GUI menu beforehand to match the device to be connected.



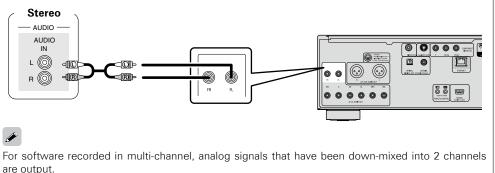
#### NOTE

- Do not short circuit between each terminals. When making connections, check the input terminal layout of the device to be connected with the owner's manual.
- The default DVD-A1UD balance model XLR input connectors pin alignment is as shown.

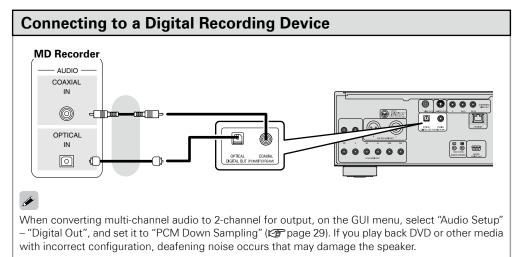
For software recorded in multi-channel, analog signals that have been down-mixed into 2 channels are output.

#### Connecting to a Device with Analog 2-channel Audio Input Terminal with Stereo Pin Plug Cable

On the GUI menu, select "Audio Setup" - "7.1ch Audio Out", and set it to "2 channel" (1) page 27).



# 4. Recording a CD



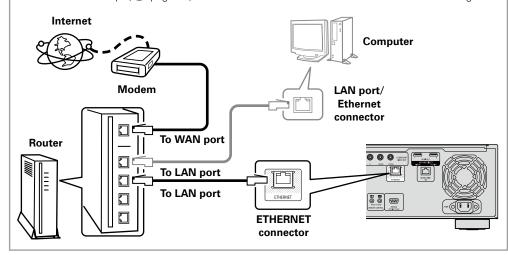
# 5. Updating to the DVD-A1UD's Latest Software Version

Getting Started

# Troubleshooting Specifications

# **Connecting to the Network**

- You can update by downloading the latest firmware from the Internet.
- For more information, on the GUI menu, select "Other Setup" "Firmware Update" (P page 33). • See "Network Setup" (127 page 31) on the GUI menu for more information on network setting.



#### System Requirement

#### □ Internet Connection by Broadband Circuit

#### □ Modem

Device that connects to the broadband circuit and conducts communications on the Internet. A type that is integrated with a router is also available.

#### Router

When using the DVD-A1UD, we recommend a router with the following features.

• Built-in DHCP (Dynamic Host Configuration Protocol) server. Function that automatically assigns an IP address on the LAN.

• Built-in 100BASE-TX switch (built-in switching hub compatible with speeds upwards of 100 Mbps)

#### □ Ethernet cable (CAT-5 or greater recommended)

- An Ethernet cable is not included with the DVD-A1UD.
- For Ethernet cable, we recommend you use shielded straight cable (normal type). If you use the flat type or a non-shielded cable, the noise may adversely affect other devices.

# (

For Internet connection, use an ISP (Internet Service Provider). Ask your local dealer for details.

#### NOTE

- It is necessary to subscribe to an ISP in order to connect to the Internet. If you already have a broadband connection, there is no need to subscribe anew.
- The router you can use varies with the ISP. For more information, contact your ISP or PC dealer.
- DENON assumes no responsibility whatsoever for any communication errors or troubles resulting from customer's network environment or connected devices.

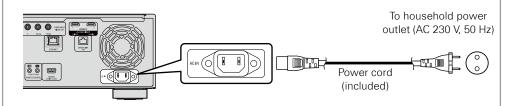
#### Others

- The DVD-A1UD can use the DHCP function to automatically set the network.
- With the type of circuit in which network setting is performed manually, when subscribed to a provider, conduct the setting in accordance with "Network Setup" on the GUI menu (2) page 31).
- If you connect the DVD-A1UD to a network without a DHCP function, conduct IP address and other settings according to "Network Setup" on the GUI menu (Program page 31).
- The DVD-A1UD does not support PPPoE. If you subscribe to a circuit that is set with PPPoE, a PPPoEcompatible router is required.
- When setting manually, check the setting contents with the network administrator.

**Getting Started** 

# Connecting the Power Cord

Connect the included power cord to the DVD-A1UD, and plug it into an AC outlet.



# NOTE

 $\bullet$  Be sure to insert the power plug firmly. Incomplete connection results in noise generation.

# **Once Connections are Completed**

# **Turning the Power On**

# Press the unit's $\bigcirc$ or the remote control's $\bigcirc$ .

The power is turned on, and the power indicator lights green. "LOADING" appears on the display, and disc information is read.

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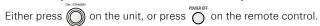
(DVD-A1UD) (Remote control unit)

# 

On the GUI menu, when "Other Setup" – "Auto Power Mode" – "On" (1277) page 32), the following states are maintained for about 30 minutes, and then the power is turned automatically to standby.

- Disc not loaded
- Playback has stopped
- Stopped due to resume function

#### **U** When power is switched to standby



The power indicator lights red.

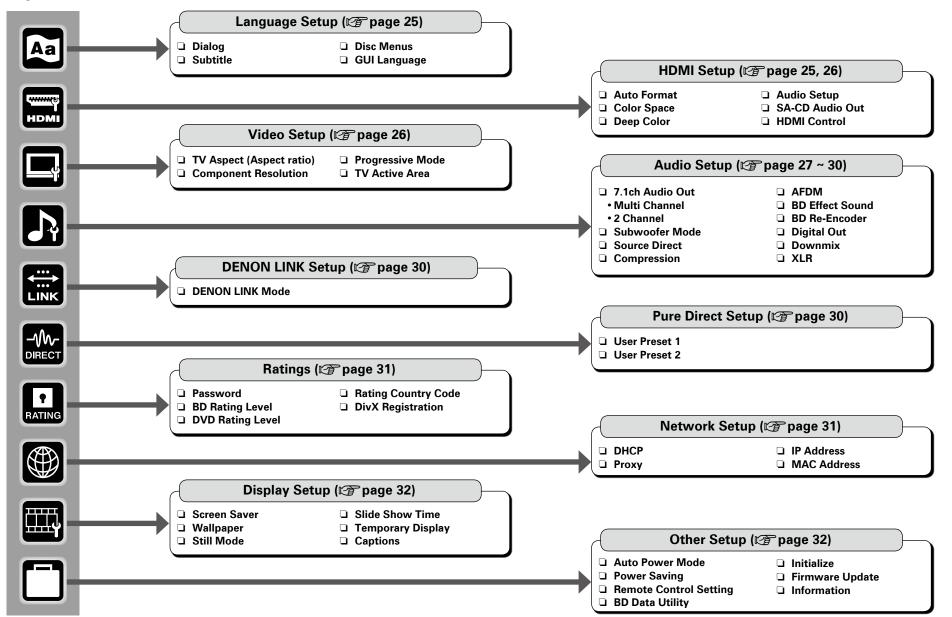


During power standby, a slight amount of power is consumed. To totally cut off the power, remove the power cord from the power outlet.

# **GUI Menu Setup**

# Menu Map

Pressing 🕥 displays the GUI menu. From this menu, you can move to various setting screens.



Getting Started

Connections

Setup

Playback

HDMI Control Function Information

Troubleshooting

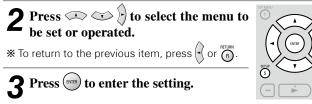
Specifications

Connections

Setup

# **GUI Menu Operation**





#### **Exiting the GUI Menu**

- Press vhile the GUI menu is displayed.
- The GUI menu display disappears.

#### NOTE

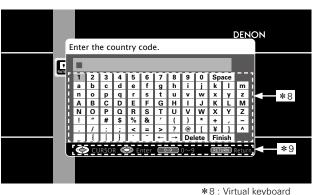
You must use the GUI menu to make settings or operate while a disc or SD Memory Card is not inserted. In cases in which the resume function is activated, you may not make correct settings.

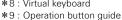
# **Examples of GUI Menu Screen Displays**

Typical examples are described below.

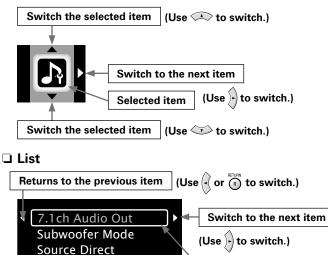
# [Example 1] Menu selection screen (Top menu) DENON \*1 🗖 LANGUAGE SETUP \*3 \*2 \*1 : List GUI menu setup icons \*2 : Currently selected setup icon \*3 : Currently selected setup item \*4 : List of currently selected setup items \*5 : Guide text for the currently selected Press 🏵 to select " 🖪 setup item and then press 🔎 (Or press (INTER).) DENON AUDIO SETUP \_\_\_\_\_ \*6 -> 🔊 7.1ch Audio Ou Multi Channel Subwoofer Mode Source Direct \_\_\_\_\_ Compression AFDM **BD Effect Sound** \*6 : Selected setup icon \*7 : Options of the selected setup item

#### [Example 2] Rating Country Code input screen (with virtual keyboard)





#### 



Compression

**BD** Effect Sound

AFDM

#### **%** Switch the selected item using $( \cdot ) ( \cdot )$ .

Selected item

Text colors of selected items of the GUI menu are as follows: • White : These items can be selected.

• Gray : These items cannot be selected.

Playback | HDMI Control Function Information Troubleshooting Specifications

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Getting Started



#### Set the language used for playback dialogs, subtitles, and menus.

| Setting items                                | Setting contents  |
|--|---|
| <b>Dialog</b><br>Set the dialog used to play | <b>Original</b> : Plays the dialog selected at the top in the language menu stored in the disc.   |
| BDs or DVDs.                                 | English/French/Spanish/German/Japanese/Italian/Swedish/Dutch/<br>Russian/Chinese/Korean/Danish/Finnish/Norwegian/Icelandic/<br>Hungarian/Romanian/Turkish/Greek/Irish/Portuguese/Polish/Czech/<br>Slovak/Bulgarian<br>Others : Enter the language code. |
| Subtitle                                     | <b>Off</b> : Do not display subtitles.  |
| Set the subtitle language                    | English/French/Spanish/German/Japanese/Italian/Swedish/Dutch/   |
| used to play BDs or DVDs.                    | Russian/Chinese/Korean/Danish/Finnish/Norwegian/Icelandic/<br>Hungarian/Romanian/Turkish/Greek/Irish/Portuguese/Polish/Czech/   |
|  | Slovak/Bulgarian  |
|  | Others : Enter the language code.   |
| Disc Menus                                   | English/French/Spanish/German/Japanese/Italian/Swedish/Dutch/   |
| Set the language used for                    |   |
| BD or DVD menus.                             | Hungarian/Romanian/Turkish/Greek/Irish/Portuguese/Polish/Czech/   |
|  | Slovak/Bulgarian<br>Others : Enter the language code.   |
| GUI Language                                 | English/Français/Español/Deutsch/Italiano/Svenska/Nederlands/   |
| Set the GUI language.                        | 日本語   |

#### NOTE

The setting may not be active depending on the disc.

# ø

If "Other" is selected for "Dialog", "Subtitle" or "Disc Menus", refer to "Language Code List" ( $\mathbb{CP}$  page 51), use number buttons (0) ~ (9) to input the language code, then press (11) to set.



Default settings are underlined.

Set the HDMI output signal or HDMI control function.

| Setting items   | Setting contents   |
|---|--|
| Auto Format<br>Set the content of HDMI<br>video output resolution item<br>"Auto" (P page 15) with<br>HERE .   |  |
| <b>Color Space</b><br>Set the video signal system<br>to be output from HDMI.  | <ul> <li>(HDMI 1) or (HDMI 2): Set the video signal system to be output from HDMI1 or HDMI2.</li> <li>YCbCr: Output by YCbCr video format.</li> <li>RGB Normal: Output using the RGB video system (16 (black) to 235 (white)).</li> <li>RGB Enhanced: Output using the RGB video system (0 (black) to 255 (white)).</li> </ul>   |
| <b>Deep Color</b><br>Expands the color depth<br>(number of used colors)<br>of the HDMI video signal,<br>enabling playback with more<br>natural colors and free of<br>streaking. |  |
| Audio Setup<br>Set the audio signal system<br>to be output from HDMI.   | <ul> <li>[Auto]: Automatically selects and outputs signals that can be input to the connected HDMI device. The bitstream signal takes priority.</li> <li>[Multi LPCM BM On]: Decoded Linear PCM multi-channel signal is output by the DVD-A1UD. Speaker setting is enabled. (BM: Bass Management) For setting, on the GUI menu, refer to, "Audio Setup" – "7.1ch Audio Out" (P page 27, 28).</li> <li>Speaker Configuration : Set the speaker configuration used for playback. Automatically sets channel components and characteristics according to setting.</li> <li>Channel Level : Set the volume of the test tone to be the same when it is output from each speaker.</li> <li>Distance : Set the distance between the listening position and each speaker.</li> </ul> |
|   | <b>[Multi LPCM BM Off]</b> : Decoded Linear PCM multi-channel signal is output by the DVD-A1UD. This setting is not made in speaker setting. (BM: Bass Management)   |
|   | [2ch] : Output the downmixsed 2-channel LPCM signal.   |
|   | [Mute] : Do not output audio from HDMI.  |

SETUP



ENTER

RETURN

Specifications

|                            | HDMI Setup  |
|----------------------------|---|
| Setting items              | Setting contents  |
| SA-CD Audio Out            | <b>On</b> : Super Audio CD audio is output.   |
| Set to output stereo/multi | Off : Super Audio CD audio is not output.   |
| area audio of Super Audio  | <i>A</i>  |
| CD to the HDMI terminal.   | The Super Audio CD audio signal is a 44.1 kHz/16-bit Linear PCM output.   |
| HDMI Control               | [Control]   |
| Can operate the unit in    | • <b><u>Off</u></b> : Disable the HDMI control function.  |
| conjunction with an HDMI   | • HDMI1 On : Link with the device connected to HDMI1.   |
| control support device.    | • HDMI2 On : Link with the device connected to HDMI2.   |
|                            | [Power Off Control]   |
|                            | • <b>On</b> : Turns the DVD-A1UD's power to standby through linkage to the                                      |
|                            | TV.   |
|                            | • Off : Does not turn the DVD-A1UD's power to standby through linkage   |
|                            | to the TV.  |
|                            | Contraction of the second s |
|                            | • For the HDMI control function to operate, it is necessary for the DVD-  |
|                            | A1UD or HDMI-compatible TV connected to the DVD-A1UD to have an   |
|                            | HDMI connection.  |
|                            | • Refer to "HDMI Control Function" (12 page 49) for more information  |
|                            | about the HDMI control function.  |
|                            | • The HDMI control function from the connected device becomes valid   |

- when, on the GUI menu, "DENON LINK Setup" "DENON LINK Mode" is set to "4th" (😰 page 30).
- After the "HDMI Control" setting has been changed, always turn off the power to the connected equipment and then turn it back on.

#### NOTE

If you set "DENON LINK Setup" - "DENON LINK Mode" on the GUI menu to "4th", you will no longer be able to change the "HDMI Control" - "Control" setting. To change the setting, switch "DENON LINK Mode" to a setting other than "4th" first and then change the setting.



HDMI Setup

Set the video output signal according to the connected TV.

| Setting items  | Setting contents   |
|--|--|
| TV Aspect (Aspect ratio)<br>Set the screen type and<br>display mode of the TV.                                     | <ul> <li>16:9 Squeeze Auto : Output to a wide screen TV. For 4:3 video, display in the center of the screen without changing the aspect ratio.</li> <li>WIDE (16:9) : Output to a wide screen TV.</li> <li>4:3 PS : Output to a 4:3 TV. For wide video, trim the left and right side of the image and display in 4:3 aspect ratio. *1</li> <li>4:3 LB : Output to a 4:3 TV. Display all of the wide video. *2</li> </ul> |
| <b>Component Resolution</b><br>Set the component output resolution.  | 480/576i, 480/576P, 720P, 1080i,<br>Source Direct : Output video using its source resolution. Convert the<br>1080p video source to 1080i.  |
| Progressive Mode<br>Set an appropriate<br>progressive conversion<br>mode for the source video<br>material.         | Video1 : Suitable for playing video material discs.  |
| TV Active Area<br>Sets the horizontal display<br>range when the analog<br>video output resolution is<br>480i/576i. | Full : Set when a home-use monitor is connected.         Normal : This setting is used when video synchronization is disturbed on a professional-use monitor.         Image: This is not available for HDMI output.  |

\*1 : Depending on the video content, even though you set the 4:3 PS (Pan Scan), the content may be output in 4:3 LB (Letter Box).

\*2 : Only valid for content recorded in 480i/576i.

ENTER

SETUP

(s)





**Getting Started** 

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# Audio Setup

Set the speaker or audio to be output.

Setting related to each channel setting and other audio in the case of outputting analog audio signals decoded by the DVD-A1UD.

#### Setting items

#### 7.1ch Audio Out

Makes the audio setting for output of analog 7.1-channel audio to a multi-channel amplifier.

#### NOTE

You cannot select "None" or "No" for "HDMI Setup" - Audio Setup" - "Multi LPCM BM On" - "Speaker on the GUI menu.

# Setting contents

#### Multi Channel

Set the speaker configuration, channel level and distance for multichannel playback.

When outputting multi-channel audio set to surround sound by the DVD-

A1UD, to the analog input of an AV Amp, set so that the AV Amp outputs audio without modification. If the AV Amp conducts further surround processing, the appropriate audio will not be output.

#### 2 Channel

Configuration" (127 page 25) Outputs multi-channel downmixed audio from the front speaker output terminals (FL/FR) of the 7.1-channel audio output terminals. Make this setting when outputting to a TV and 2-channel amplifier.

#### NOTE

The 7.1-channel audio output terminals output only FL/FR when you make this setting.

**Speaker Configuration :** Set the speaker configuration.

[Front] : Set the front speaker size.

- Large : Use of a large speaker that can adequately play back low frequencies.
- Small : Use of a small speaker that has inadequate playback capacity for low frequencies.

**[Center]** : Set the presence and size of the center speaker.

- Large : Use of a large speaker that can adequately play back low frequencies.
- Small : Use of a small speaker that has inadequate playback capacity for low frequencies.
- None : Select when a center speaker is not connected.

**[Subwoofer]** : Set the presence of a subwoofer.

• Yes : Use a subwoofer.

SETUP

(s)

• No : Select when a subwooofer is not connected.

| Setting items   | Setting contents  |
|-----------------|---|
| 7.1ch Audio Out | <ul> <li>[Surround]: Set the presence and size of the Surround speakers.</li> <li>Large: Use of a large speaker that can adequately play back low frequencies.</li> <li>Small: Use of a small speaker that has inadequate playback capacity for low frequencies.</li> </ul> |
|                 | • None : Select when the surround speakers are not connected.   |
|                 | [Surr. Back] : Set the presence, size and number of surround back speakers.   |
|                 | <ul> <li>Size : Set the surround back speaker size.</li> <li>Large : Use of a large speaker that can adequately play back low frequencies.</li> </ul>   |
|                 | Small : Use of a small speaker that has inadequate playback capacity for low frequencies.   |
|                 | None : Select when the surround back speakers are not connected.<br>• Number : Set the number of surround back speakers.  |
|                 | <b>1 spkr :</b> Use only one surround back speaker. Surround back audio is output from the surround back L terminal.  |

Default settings are underlined.

2 spkrs : Use two surround back speakers.



)-)



Getting Started Connections

Setup

| Setting items  | Setting contents   | Setting items   | Setting contents  |
|----------------|--|-----------------|---|
| .1ch Audio Out | <b>[Crossover Freq.]</b> : Set the upper limit of the low frequency signals output from the subwoofer.   | 7.1ch Audio Out | <b>Channel Level :</b> Set the volume of the test tone to be the same whe it is output from each speaker.   |
|                | <ul> <li>• 40Hz/60Hz/80Hz/90Hz/100Hz/110Hz/120Hz/150Hz/200Hz/250Hz</li> <li>: Outputs at below set frequency, each speaker's bass signal output from the subwoofer. Set this according to the low frequency reproduction capabilities of the speakers you are using.</li> </ul>  |                 | <ul> <li>[Mode] : Select a test tone output method.</li> <li><u>Auto</u> : Automatically switch the test tone output speaker.</li> <li>Manual : Manually switch the test tone output speaker.</li> </ul>  |
|                | <ul> <li>Advanced : Set the low frequency signals to be output from the signals of the respective speakers to the subwoofer.</li> <li>Front, Center, Surround, Surr. Back</li> <li>40Hz/60Hz/80Hz/90Hz/100Hz/110Hz/120Hz/150Hz/200Hz/250Hz</li> <li>LFE / LFE+Main</li> </ul>  |                 | [Start] : Begin outputting the test tone.<br>Front L / Center / Front R / Surround R /<br>Surr. Back R / Surr. Back L / Surround L / Subwoofer<br>When the test tone output stops, press  |
|                | 80Hz/90Hz/100Hz/110Hz/120Hz/150Hz/200Hz/250Hz  |                 | <ul> <li>[SW +10dB]: Increase the subwoofer output level by 10 dB. *</li> <li><u>Off</u>: Do not change the subwoofer output level.</li> <li>On: Increase the subwoofer output level by +10 dB.</li> </ul>  |
|                | Channel" – "Speaker Configuration" – "Subwoofer" is set to "Yes" (P page 27), you can select "LFE" or "LFE+Main".  |                 | <ul> <li>[Default] : Reset all channel level settings to factory default.</li> <li>• No : Do not Reset.</li> <li>• Yes : Reset.</li> </ul>  |
|                | • Select "Large" or "Small" not according to the physical size of the speaker but according to the low frequency reproduction capabilities based on the frequency set at "Crossover Freq.".  |                 | <ul> <li>Distance : Set the distance between the listening position and eac speaker.</li> <li>[Meters] or [Feet] : Set the unit of distance.</li> </ul>   |
|                | <ul> <li>On the GUI menu, if the "Audio Setup" – "7.1ch Audio Out"– "Multi<br/>Channel" – "Speaker Configuration" item setting is changed, other<br/>settings are automatically changed as well.</li> </ul>  |                 | [Step] : Set the minimum variable width of the distance.<br>0.1m, 0.01m, 1ft, 0.1ft   |
|                | [Example]  |                 | [Default] : Reset all distance settings to factory default.   |
|                | <ul> <li>If you set "Front" to "Small", "Subwoofer" is set to "Yes" and "Large" cannot be selected for "Center", "Surround" and "Surr. Back".</li> <li>Audio signal (sampling frequency, number of channels) from the HDMI output terminal may be restricted by the specification of the HDMI audio that can be input by the device at the other side.</li> <li>[Example]</li> </ul> |                 | Front L / Front R / Center / Subwoofer / Surround L / Surround R<br>Surr. Back L / Surr. Back R : Select the speaker you want to set<br>and set the distance. Set the value that is closest to the measured<br>distance.<br>0~18.00m or 0~60ft        |
|                | If the HDMI audio specification of the device at the other side is the 5.1 channel, even when DVD-A1UD plays back by the 7.1 channel, the 5.1 channel audio is automatically output. In that case, the analog audio output becomes the 5.1 channel output as well.   |                 | <ul> <li>Default settings :<br/>Front/Center/Subwoofer : 3.6 meters (12 feet)<br/>Surround/Surr. Back : 3.0 meters (10 feet)</li> <li>Set the difference in the distance betweem the speakers to less tha<br/>6.0 meters (20 feet).</li> </ul>        |
|                |  |                 | <b>LFE</b> : Add the low frequency signal of the channel for which the speaker size is set to "small" to the subwoofer signal and output it.<br><b>LFE+Main</b> : Add the low frequency signal of all channels to the subwoofer signal and output it. |

 \*: "SW +10dB" cannot be set for "HDMI Setup" – "Audio Setup" – "Multi LPCM BM On" – "Channel Level" on the GUI menu.

Playback HDMI Control Function Information Troubleshooting Specifications



.Moves the cursor (Up/Down/Left/Right)

ENTER



:Return to previous menu

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Setup

Playback HDMI Control Function Information Troubleshooting Specifications

| Setting items   | Setting contents  | Setting items   | Setting contents  |
|---|---|---|---|
|   | <b>Off</b> : Enable the speaker and subwoofer settings.<br><b>On</b> : <b>50kHz</b> : Output the disc contents as is. When playing Super Audio CD, output up to 50 kHz audio signals.<br><b>On</b> : <b>100kHz</b> : Output the disc contents as is. When playing Super Audio   | <b>BD Effect Sound</b><br>Sets for a click sound and<br>other outputs during BD<br>popup menu operations. | <u>On</u> : Outputs BD effect sound.<br>Off: Does not output BD effect sound.   |
| NOTE<br>Set to within the playback<br>frequency band of the<br>amplifier you are to use:<br>"On" at "50 kHz" or "100<br>kHz". Setting outside the<br>frequency band can result<br>in damage to your amplifier<br>and even fire. | <ul> <li>CD, output up to 100 kHz audio signals.</li> <li>Setting "On: 50 kHz" or "On: 100 kHz" enables full-range playback on all channels recommended for DTS. (Note that this results in a 5 dB increase in subwoofer volume, and a 15 dB increase with Super Audio CD). This also allows you to play back the 6-channel source of DVD-Audio recorded on all channels with the full frequency range. In this case, make an analog connection according to disc operating manual.</li> <li>When set to "On: 50 kHz" or "On: 100 kHz", all speaker sizes are set to "Large" and "Yes" is set for the subwoofer.</li> <li>Even when set to "On: 50 kHz" or "On: 100 kHz", "Channel Level" and "Distance" settings are available.</li> </ul> | -   | <ul> <li>Auto : Outputs primary audio (main audio) in the same type of audio format. Dolby Digital/Dolby Digital Plus/Dolby TrueHD are output a Dolby Digital, DTS/DTS-HD are output as DTS and Linear PCM is output as Linear PCM.</li> <li>Dolby Digital : Outputs to the digital audio output terminal (optical coaxial) with Dolby Digital.</li> <li>DTS : Outputs to the digital audio output terminal (optical/coaxial) with DTS.</li> <li>Valid when "BD Audio Mode" is set to "Mix Audio Output" (127 pag 33).</li> </ul>   |
| range of Dolby TrueHD/<br>Dolby Digital/Dolby Digital<br>Plus audio. At night or other<br>times when you cannot play  | <b><u>Auto</u></b> : Automatically compress Dolby TrueHD audio dynamic range. The sound is not compressed when playing signals other than Dolby TrueHD  | audio output.<br>For more information on each   | <ul> <li>Bitstream : Outputs a bitstream signal. Converts Dolby TrueHD, Dolb Digital Plus to Dolby Digital, and DTS-HD to DTS for output.</li> <li>PCM : Output the downmixed audio signal to 2ch LPCM.</li> <li>PCM Down Sampling : Convert sampling frequency audio greater tha 48 kHz to a 48 kHz 2ch LPCM audio output signal.</li> <li>When outputting CD, etc. to a digital recording device such as the CI recorder, convert to PCM or PCM down sampling.</li> <li>When a disc with recorded Linear PCM or PPCM (Packed PCM) is player back, this outputs Linear PCM irrespective of the setting.</li> </ul> |
| AFDM<br>Automatically set the<br>surround mode by detecting   | <ul> <li>On : Automatically set surround mode when the ID signal is included.</li> <li>Off : Do not set surround mode even when the ID signal is included.</li> <li>MTRX : Create a surround audio signal by matrix processing, regardless of the presence of an ID signal.</li> <li>An EX flag may not be included for Dolby Digital EX sources. Even with "AFDM" set to "On", set to "MTRX" in case the playback mode does not automatically switch.</li> <li>NOTE</li> <li>This setting is valid when "Audio Setup" – "7.1ch Audio Out" on the GUI</li> </ul>  | convert a multi-channel   | Lt/Rt : Signals are converted to Dolby Surround compatible 2-channe<br>audio signals for output. This setting is valid for DTS-HD, DTS Digits<br>Surround, Dolby Digital Plus and Dolby Digital audio signals. (If th<br>connected AV Amp is Dolby Pro Logic compatible, AV Amp plays bac<br>using surround audio.)<br>Stereo : Outputs by converting to the 2ch (stereo) audio.<br>NOTE<br>In order to enable the "Lt/Rt" setting when playing back BD, set "B<br>Audio Mode" to "HD Audio Output" (P page 33).  |
|   | <ul> <li>mis set to (I) page 32) and when "HDMI Setup" – "Audio Setup" on the GUI menu is set to "Multi LPCM BM On" (I) page 25).</li> <li>This setting is invalid when "Audio Setup" – "Source Direct" on the GUI menu is set to "On" (I) page 29), and when "DENON LINK Setup" – "DENON LINK Mode" is set to anything other than "Off" (I) page 30).</li> <li>This function is invalid for the DTS-CD source.</li> </ul>  |   |   |





XLR

Setting items

from the XLR terminal.

Set the signal to be output • Normal : Normal polarity.

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(0<sub>9</sub>0)

**Getting Started** 

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**HDMI Control Function** 

Information

Audio Setup

#### □ Signals Compatible with DENON LINK Setting and Transmission

The DENON LINK setting for the DENON LINK version of the connected AV Amp is as follows:

|  |  | Media                                       |               |               |                      |    |    |
|--|--|---|---------------|---------------|----------------------|----|----|
| DENON LINK version of<br>AV Amp                    | The DENON<br>LINK setting<br>of the DVD-<br>A1UD | BD<br>(During<br>jitter-free<br>connection) | DVD-<br>Video | DVD-<br>Audio | Super<br>audio<br>CD | CD | SD |
| 2nd Edition<br>("S.E." displayed near<br>terminal) | "2nd"  | ×   | 0             | 0             | ×                    | 0  | 0  |
| 3rd Edition<br>("3rd" displayed near<br>terminal)  | "3rd"  | ×   | 0             | 0             | 0                    | 0  | 0  |
| 4th Edition<br>("4th" displayed near<br>terminal)  | "4th"  | 0   | 0             | 0             | 0                    | 0  | 0  |

#### 

With DENON LINK connections, no audio signals other than those of BD are output from the HDMI terminal.

(When "DENON LINK Mode" is set to "2nd" and "HDMI Setup" -- "SA-CD Audio Out" (12) page 26) is set to "On", the audio signals of Super Audio CD are output from the HDMI terminal.)



**Default settings are underlined.** 

Makes settings regarding digital audio and video output modes during Pure Direct mode, as well as display messages. Two types of setting can be registered.

| Setting items                 | Setting contents   |
|-------------------------------|--|
| User Preset 1/                | [Digital Out] : Set whether to output signals to the digital audio output  |
| User Preset 2                 | terminal.  |
| This sets the operating mode  | • <b>On</b> : Enable digital audio output.                                 |
| for "User Preset 1" or "User  | • Off : Disable digital audio output.                                      |
| Preset 2" selected by Ref.    | [Video Out] : Set option of video output.                                  |
| Setting each of these items   | • <b>On</b> : Enable video output.   |
| to "Off" enables output of    | • Off : Disable video output. This setting also disables audio output from |
| high quality analog signals   | the HDMI terminal.   |
| free of interference from the | [Display] : Set option for front panel display.                            |
| associated circuits.          | • <b>On</b> : Turn on display.   |
|                               | • Off : Turn off display.  |
|                               | <i>₽</i>   |
|                               | For more information, see "Playing Back High-quality Audio (Pure Direct    |
|                               | Function)" (😰 page 40).  |

**DENON LINK Setup** Default settings are underlined.

alignment is as shown.

#### Set the audio signal to be output from the DENON LINK terminal.

| Setting items  | Setting contents   |
|--|--|
| <b>DENON LINK Mode</b><br>Set the audio output of<br>DENON LINK. | <ul> <li>[Off]: Do not use DENON LINK.</li> <li>[2nd]: Output digital audio using DENON LINK 2nd Edition.</li> <li>[3rd]: Output digital audio using DENON LINK 3rd Edition.</li> <li>[4th]: Output digital audio using DENON LINK 4th Edition.</li> <li>Compatible with jitter-free connection. For more information, refer to "DENON LINK Connection ① Making a Jitter-free Connection" (12) page 18).</li> <li>HDMI 1 : Improve HDMI1 digital signal jitter.</li> </ul> |
|  | • HDMI 2 : Improve HDMI2 digital signal jitter.  |
|  | <ul> <li>When set to "4th", the HDMI control function becomes available from<br/>the connected device.</li> </ul>  |
|  | • When "4th" is set and jitter-free connection is set up, audio affected<br>by the jitter-free function is output from the HDMI terminal during<br>BD playback. When playing back media other than that, video signal<br>is output from the HDMI terminal and audio signal is output from the<br>DENON LINK terminal, respectively.  |
|  | <ul> <li>To play DENON LINK 4th signals, connect to a DENON LINK 4th-<br/>compatible AV Amp using an HDMI and a DENON LINK cable.</li> <li>About the 4th setting of the AV Amp, see the owner's manual of the</li> </ul>   |

About the 4th setting of the AV Amp, see the owner's manual of the AV Amp.

Setting contents

[Gain Up] : Can increase output gain when the input sensitivity of a

• On : Increase the output gain of the XLR terminal. Set when the input

The default DVD-A1UD balance model XLR audio connectors pin

**[Terminal Polarity] :** Set the polarity of the XLR terminal.

• Off : Outputs at standard gain from the XLR terminal.

(1) GROUND (2) HOT (3) COLD

• Inversion : Reverse the polarity.

device connected via XLR is low.

sensitity of the connected device is low.

- cted ring gnal the
- 4th-

SETUP



ENTER

Pure Direct Setup



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Ratings

Set BD or DVD parental lock or display DivX<sup>®</sup> registration codes.

| Setting items  | The default setting is "0000".  |  |  |
|--|---|--|--|
| Password<br>Sets the password for<br>changing the parental<br>control level and parental<br>control country code of BD<br>and DVD. |   |  |  |
| <b>BD Rating Level</b><br>Set the parental level for<br>playing BD.  | <b>Level 0 ~ 254 :</b> Set the age allowed to play back media. Restricts playback of discs with relevant parental control. <b>No Limit :</b> Do not restrict playing of BDs.  |  |  |
| <b>DVD Rating Level</b><br>Set the parental level for<br>playing DVD.  | Level1 ~ 8 : Set the parental level for playing DVD.<br>Lock All : Restrict playing of all DVDs.<br>No Limit : Do not restrict playing of DVDs.   |  |  |
| Rating Country Code<br>Sets the standard country<br>parental control.<br>Apply the parental level of<br>the set country.           | Argentina / Australia / Austria / Belgium / Brazil / Canada / Chile /<br>China/ Denmark / Finland / France / <u>Germany</u> / Hong Kong / India<br>/ Indonesia / Italy / Japan / Korea, Republic of / Malaysia / Mexico<br>/ Netherlands /New Zealand / Norway / Pakistan / Philippines /<br>Portugal / Russian Federation / Singapore / Spain / Switzerland<br>/ Sweden / Taiwan / Thailand / United Kingdom / United States /<br>Colombia / Greece / Ireland / Luxembourg / Poland<br>Others : Inputs the country code. Refer to "Country Code List" (17) page<br>52) and, with the virtual keyboard, use (1) and (1) to input<br>the country code. |  |  |
| $\mbox{DivX}$ Registration Display the $\mbox{DivX}^{\mbox{$\mathbb{R}$}}$ registration code.                                      | Show Code : Display the $DivX^{\textcircled{R}}$ registration code  |  |  |



#### Default settings are underlined.

Set to connect to the Internet.

To obtain update support for your DVD-A1UD, you can download the latest firmware from our website.

Make a network connect beforehand according to "Connecting to the Network" (1 page 21).

| Setting items   | Setting contents  |
|---|---|
| <b>DHCP</b><br>Set how to perform network<br>configuration, automatically<br>or manually.   | <b>[On]</b> : Automatically configure the network by the DHCP function.<br><b>[Off]</b> : When connecting to a network, which does not have the DHCP function, manually configure the following network settings. For the details of the settings, confirm with the provider or network administrator. Use $\textcircled{0} \sim \textcircled{9}$ to enter a value and then press $\fbox{0}$ to finalize it.                    |
| Since the factory default<br>setting is "On", you do not<br>need to set items such as<br>the IP address if the DHCP<br>server of the broadband<br>router is set to "Enable".<br>Configure a proxy server if<br>necessary. |   |
| <b>Proxy</b><br>Set to connect to the Internet<br>via a proxy server.   | <ul> <li>[Off] Do not use a proxy server.</li> <li>[On (Address)] Set to connect to the Internet via a proxy server. Use the address to specify the proxy server. Use (1) ~ (9) to enter the address and then press (10) ~ (9) to enter a port number and then press (10) ~ (9) to enter a port number and then press (10) ~ (9) to enter a port number and then press (10) ~ (10) (10) (10) (10) (10) (10) (10) (10)</li></ul> |
| IP Address  | DVD-A1UD's IP address is displayed. If the IP address cannot be obtained or is not set, "…" is displayed. In that case, check that the connection and network configuration is correct.   |
| MAC Address   | Displays the MAC address of the DVD-A1UD.   |

SETUP



ENTER



Getting Started

Connections

**Display Setup** 

Default settings are underlined.

#### Set display-related items.

| Setting items   | Setting contents  |
|---|---|
| Screen Saver<br>Set the screensaver.  | <b>Off</b> : Do not use the screensaver.<br><b>On</b> : The screensaver function activates when stop or pause status continues for about three minutes.   |
| <b>Wallpaper</b><br>Set to display the background<br>while playback is stopping.  | <b>Picture</b> : Displays the DENON logo.<br><b>Black</b> : Set the background to black.<br><b>Gray</b> : Set the background to gray.<br><b>Blue</b> : Set the background to blue.  |
| <b>Still Mode</b><br>Set image quality during<br>pause.   | <ul> <li>Automatic : Display automatically using "Field" or "Frame" per the still image information.</li> <li>Field : Set when there is a blurred image when "Automatic" image display is set.</li> <li>Frame : Set to display non moving images in high resolution.</li> </ul> |
| <b>Slide Show Time</b><br>Sets the display time of<br>JPEG files.   | 3 ~ 5 ~ 100sec : This sets the display time per frame of a JPEG file during slideshow playback.   |
| <b>Temporary Display</b><br>When the display is set to<br>"Off" by the Dimmer Control<br>(IP page 49) or Pure Direct<br>Function (IP page 40), this<br>sets it to temporarily display<br>operations received. | <b><u>Off</u></b> : Do not temporarily display operations.<br><b>On</b> : Temporarily display operations.   |
| <b>Captions</b><br>This setting output a subtitles<br>signal to a closed caption<br>decoder (sold separately).  | <b>Off</b> : Do not output the closed caption (subtitle) signal.<br><b>On</b> : Output the closed caption (subtitle) signal.  |



Set other items.

| Setting contents  |
|---|
| <ul> <li>Off : Do not use auto power mode.</li> <li>On : This setting automatically sets the power to standby if any of the following states continues for approximately 30 minutes.</li> <li>Disc not loaded</li> <li>Playback has stopped</li> <li>Stopped due to resume function</li> </ul>  |
| <ul> <li>Power Saving Standby : This is the lowest power consumption mode<br/>During standby, operations are not accepted via HDMI control or RS<br/>232C.</li> <li>Normal Standby : This is the low power consumption mode. During<br/>standby, operations are accepted via RS-232C but not accepted by HDM<br/>control.</li> <li>HDMI Control Mode : Setting for turning the power on using an externa<br/>device's HDMI control function or by operation via RS-232C. Slightly<br/>higher power consumption.</li> <li>Quick Start Mode : Start up time is faster but power consumption during<br/>standby is higher.</li> </ul>  |
| <ul> <li>[Remote ID]<br/>Switches the DVD-A1UD's remote control ID code when other DENON<br/>BD Players are in the vicinity.</li> <li>• DENON 1 : Set the switch in the remote control battery compartment to<br/>"1" as well ("Remote Control Settings (Remote Control Side)" @ page<br/>7).</li> <li>• DENON 2 : Set the switch in the remote control battery compartment to<br/>"2" as well ("Remote Control Settings (Remote Control Side)" @ page<br/>7).</li> <li>• DENON 2 : Set the switch in the remote control battery compartment to<br/>"2" as well ("Remote Control Settings (Remote Control Side)" @ page<br/>7).</li> <li>• IReceive Legacy Remocon]<br/>Set whether or not to accept remote control signals of a DENON DVE<br/>player or other device.</li> <li>• On : Accept</li> <li>• Off : Do not accept</li> </ul> |
| <ul> <li>BD Data Erase : Erases both internal memory and SD Memory Card storage.</li> <li>Initialize SD Card : Initialize the SD card to be used for the Bonus View function.</li> <li>NOTE</li> <li>Insert or remove a SD Memory Card while the power is in standby. If you insert a SD Memory Card while the power is ON, the SD Memory Card may not be read.</li> <li>The SD card used for the Bonus View function must have a capacity o 1GB or greater. Also the SD card must be initialized on the DVD-A1UD.</li> <li>This operation will delete all the data. Do not perform this operation when an SD card containing MP3 or JPEG data is inserted.</li> </ul>  |
|   |



.Moves the cursor (Up/Down/Left/Right)

:Decision the setting

ENTER

 $(\mathbf{R})$ 

Getting

Started

Connections

| Otk | ner | Se | 111 | ï |
|-----|-----|----|-----|---|
|     | 101 | 00 |     | j |

| Setting items  | Setting contents  |  |
|--|---|--|
| <b>Initialize</b><br>All settings including audio<br>mode and picture quality are<br>default settings. | Cancel : Do not initialize.<br>OK : Execute initialization.   |  |
| Firmware Update<br>Update the firmware of the<br>unit via the Internet.                                | Check for Update : Check if the latest firmware exists. You can also check approximately how long it will take to complete an update.<br>Start : Starts firmware update.<br>When updating starts, the power indicator lights red and the GUI screen is shut down.<br>During update, a rough remaining time is indicated on the display.<br>When updating is complete the power indicator lights green and normal status is resumed. |  |
| <b>Information</b><br>Displays the license for<br>the IPA font used by this<br>product.                | <b>[Font License]</b><br><b>Japanese (Original) :</b> Displays in Japanese.<br>The font used in this product's GUI menu screen conforms to IPA<br>font specifications. See the following URL for the IPA font license<br>agreement.<br>http://ipafont.ipa.go.jp/enduser_license.html  |  |

#### Cautions on "Firmware Update"

 In order to use these functions, you must have the correct system requirements and settings for a broadband Internet connection (12) page 21, 31).

• Do not turn off the power until updating is completed.

• Information regarding the "Firmware Update" function will be announced on the DENON web site each time related plans are defined.

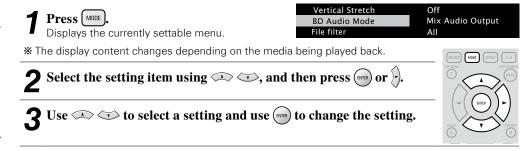
• Even with a broadband connection to the Internet, approximately 1 hour is required for the updating procedure to be completed.

Once updating starts, normal operations on the DVD-A1UD cannot be performed until updating is completed. Also, setting items of the GUI menu of DVD-A1UD or setting items of the image adjustment may be initialized.

# **Various Settings**

You can set the audio mode and change playback files.

You can set various modes during playback. The setting menu is displayed at the top of the screen.



# Setting the Audio Mode Default settings are underlined.

| Setting items  | Setting contents  |
|--|---|
| <b>BD Audio Mode</b><br>Switch BD audio playback<br>mode.  | <ul> <li>HD Audio Output : Can view by outputting high quality signals such as Dolby TrueHD, Dolby Digital Plus, or DTS-HD as its high sound quality bitstream. Cannot listen to interactive or secondary audio.</li> <li>Mix Audio Output : Outputs a mix of primary audio/interactive audio/ secondary audio.</li> <li>In the case of Dolby TrueHD, Dolby Digital Plus and DTS-HD audio playback, set to "HD Audio Output".</li> </ul>                          |
|  | NOTE<br>When "Mix Audio Output" is set and DTS-HD audio signals are played,<br>only the DTS digital surround stream of the DTS-HD audio stream is<br>decoded and output.  |
| Surround Mode<br>Converts a 2-channel source,<br>etc. to output multi-channel<br>surround audio. | and output the signal.<br><b>DTS NEO:6</b> : Apply DTS NEO:6 surround processing and output the signal.   |
|  | <ul> <li>NOTE</li> <li>This setting is valid when "Audio Setup" – "7.1ch Audio Out" on the GUI menu is set to "Multi Channel" and when "HDMI Setup" – "Audio Setup" on the GUI menu is set to "Multi LPCM BM On" (127 page 25).</li> <li>This setting is invalid when "Audio Setup" – "Source Direct" on the GUI menu is set to "On" (127 page 29), and when "DENON LINK Setup" – "DENON LINK Mode" is set to anything other than "Off" (127 page 30).</li> </ul> |

Remote control operation buttons



ENTER

RETURN

| Setting the Audio Mode |
|------------------------|
|------------------------|

| Setting items  | Setting contents   |
|--|--|
| Surround Parameters  | <ul> <li>[PLIIx Mode] : Sets to Dolby Pro Logic IIx mode.</li> <li>[PLII Mode] : Sets to Dolby Pro Logic II mode.</li> <li><u>Cinema</u> : Appropriate setting for movie sources.</li> <li>Music : Appropriate setting for music sources.</li> <li>Dimension (Setting value : 0 ~ 3 ~ 6) : Shift the center of the acoustic field forwards or backwards to adjust the playback balance.</li> <li>Center Width (Setting value : 0 ~ 3 ~ 7) : Shift the center channel audio left or right to widen the forward acoustic field image.</li> <li>Panorama (Setting : <u>Off</u>/On) : Expand the acoustic field of the front left and right channel to the surround channel to widen the forward acaustic field image.</li> <li>Game : Appropriate mode for gaming.</li> </ul> |
|  | 5  |
| heaviness of bass and treble in compressed audio sources, to produce a sound | Off : The "Restorer" is not used.         Mode1 (Restorer64) : Corrects the treble for compressed audio sources with extreme lack of treble.         Mode2 (Restorer96) : Optimally corrects treble and bass for compressed  |
|  | <ul> <li>NOTE</li> <li>Effective for compressed audio source of MP3, WMA, AAC, Dolby Digital, DTS, and MPEG.</li> <li>This setting is invalid when "Audio Setup" – "Source Direct" on the GUI menu is set to "On" (#@ page 29) and when "DENON LINK Setup".</li> </ul>   |

### menu is set to "On" (1 page 29), and when "DENON LINK Setup" -"DENON LINK Mode" is set to anything other than "Off" (1 page 30).

# Changing the Playback File Display

Default settings are underlined.

| Setting items               | Setting contents  |  |
|-----------------------------|---|--|
| File filter                 | All : Plays back MP3/WMA/AAC/LPCM/JPEG/DivX <sup>®</sup> files. |  |
| Selects the file format you | Audio : Plays back MP3/WMA/AAC/LPCM files.                      |  |
|                             | Picture : Plays back JPEG files.                                |  |
| among the files mixed on a  | Video : Plays back DivX <sup>®</sup> files.                     |  |
| disc.                       | Audio & Picture : Plays back MP3/WMA/AAC/LPCM/JPEG files.       |  |
|                             |   |  |
|                             | This operation is effective only when playback is stopped.      |  |

#### Making Other Settings Default settings are underlined.

| Setting items  | Setting contents  |  |
|--|---|--|
| Secondary Video (PIP)  | <ul> <li>Off : Does not display Secondary Video(Picture-In-picture).</li> <li>1/X * : Displays the first Secondary Video.</li> <li>2/X * : Displays the second Secondary Video.</li> <li>X/X * : Displays the X th Secondary Video.</li> <li>* : "X" is the number of Secondary Videos recorded and differs depending on the disc ("Playing Bonus View" ☞ page 38)</li> </ul> |  |
| Audio/Video Sync<br>Correct displaced video-<br>audio playback timing.                           | <b>HDMI</b> : Synchronizes audio output to HDMI output video.<br><b>Analog Video Out</b> : Synchronizes audio output to analog video output.  |  |
| Audio Delay Adjust<br>While viewing video,<br>manually adjust the time to<br>delay audio output. | ${\bf Q}$ ~ 200msec : Use this to adjust the audio output delay time manually.  |  |
| Vertical Stretch<br>Extends cinemascope<br>size video in the vertical<br>direction.              | <b>Off</b> : Displays the source video signal without modification. This should normally be set to "Off".<br><b>On</b> : Set when viewing cinemascope size video with a combination of projector and anamorphic lens. Extends the image in the vertical direction so that the top and bottom black portions disappear.  |  |

**Getting Started** 

Connections

Setup

Playback

HDMI Control Function Information

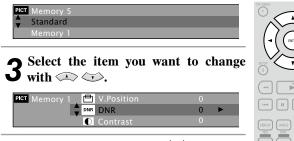
# Adjusting the Picture Quality (Picture Control)

PICTURE

You can adjust the picture quality to your liking. You can store up to a maximum of 5 values in memory.

**Press Constant**. The currently set status is displayed.

# **2** Select the memory number you want ("Memory 1" ~ "Memory 5") with ( ), and then press (.



Change the setting with 🗘 🕃.

\* Refer to the table on the right regarding contents of items which can be set.

### When Finishing Picture Adjustment

Press I during picture adjustment.

#### When Outputting Standard Picture Quality without Using Picture Adjustment

Press  $\widehat{\mathbb{R}}$  and  $\widehat{\mathbb{R}}$  to select "Standard" and then press  $\widehat{\mathbb{R}}$ .

ø

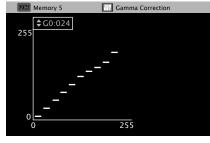
The picture adjustment set values are retained in memory even after the power is turned off.

| Setting items  | Setting contents | Default   |
|--|------------------|---|
| <b>DNR</b><br>Reduce noise in the entire picture.  | 0 ~ +3           | 0   |
| <b>Contrast</b><br>Adjust picture contrast.  | -6 ~ +6          | 0   |
| <b>Brightness</b><br>Adjust picture brightness.  | 0 ~ +12          | 0   |
| <b>Enhancer</b><br>Strengthens the contours of the picture.                                      | 0 ~ +11          | 0   |
| Gamma Correction<br>Adjust video brightness in<br>detail.  | G0 ~ 9           | G0 = 24 / G1 = 32<br>G2 = 48 / G3 = 64<br>G4 = 80 / G5 = 96<br>G6 = 128 / G7 = 160<br>G8 = 192 / G9 = 224 |
| Sharpness (medium range)<br>*1<br>Adjust picture sharpness<br>for the medium frequency<br>range. | -6 ~ +6          | 0   |
| <b>Sharpness (high range)</b><br>Adjust picture sharpness for<br>the higher frequency range.     | -6 ~ +6          | 0   |
| Hue (color tone)<br>Adjust the green and red<br>color balance.                                   | -6 ~ +6          | 0   |
| White Level<br>Adjust the white level.   | -5 ~ +5          | 0   |
| Black Level<br>Adjust the black level.   | -5 ~ +5          | 0   |
| <b>Chroma Level</b><br>Adjust the color density.   | -6 ~ +6          | 0   |
| Setup Level * 2<br>Adjust the black areas of the<br>image.                                       | 0 IRE<br>7.5 IRE | 0 IRE   |
| <b>H.Position</b><br>Adjust the left/right position.   | -7 ~ +7          | 0   |
| <b>V.Position</b><br>Adjust the top/bottom<br>position.  | -7 ~ +7          | 0   |

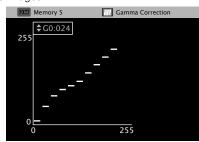
### **About Gamma Correction**

When you select "Gamma Correction", and then press ( you can change the setting with ( ( )).

In the example of the graph below, the horizontal axis shows the brightness level of the pictured recorded on the disc. The vertical axis shows the brightness of the picture output by the DVD-A1UD.



• On adjusting the brightness on the output side of bright parts on the disc side, the normally hard to see bright parts become clearly discernible images.



• On adjusting the brightness on the output side of dark parts on the disc side, the normally hard to see dark parts become clearly discernible images.

### **D** Resuming Initial Values after Gamma Correction

Press CLEAR while a graph is displayed.

| 4 5       | 6 RANCOM    |  |
|-----------|-------------|--|
| 78        | 9 (164R)    |  |
| (+10) (0) | (SRCH) CALL |  |
|           | REPEAT A-B  |  |

\*1 : This is not available for HDMI output.

\*2 : Effective only for the 480i video signal from the video output terminal, S video output terminal, and component video output terminal.

Getting Started

Connections

# Playback

### Disc playback

- □ Playing BD and DVD-Video (1277 page 37, 38)
- □ Playing Back Super Audio CD (☞ page 39)
- CD Playback (P page 39)
- DVD-Audio Playback (P page 39, 40)
- □ Playing Back High-Quality Audio (☞ page 40)

# File playback

□ File Playback (☞ page 40 ~ 42)

# Operations Enabled During Playback (27 page 43)

# NOTE

- The " O " (prohibited mark) may appear on the top right of the TV screen during an operation. This means that the operation being conducted is prohibited.
- Depending on the disc, certain operations may not be as described in this manual. Check each disc owner's manual for more information.
- During playback of a 2-layered disc, pictures may stop momentarily. This happens when the 1st layer switches to the 2nd layer. This is not a malfunction.

# Introduction

# **Before Playing a Disc**

**Turn on the power of the amplifier and TV.** 

Set the TV and amplifier function to DVD-A1UD input.

# **2** Turn the DVD-A1UD power on.

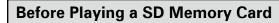
- When playing back a bonus view, before turning on the power of the DVD-A1UD, insert a SD Memory Card that has at least 1GB and has been initialized by DVD-A1UD.
- **3** Press source to set the playback media mode to "DISC MODE".

SOURCE 🔺

# Insert a disc.

4

Press to open/close the disc tray.
Insert the disc with the side you want to play facing down.

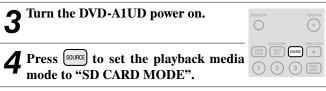


**Turn on the power of the amplifier and TV.** 

Set the TV and amplifier function to DVD-A1UD input.

### **1** Insert a SD Memory Card.

Open the door at the right side of the unit and insert the SD Memory Card in the direction indicated by the arrow with the label side up (12) page 6, 8).



# ø

The playback media mode setting remains in the memory, even when the power is set to standby.

# **About Playback Information**

| Displayed playback information changes between 🤅     |      |  |  |
|--|------|--|--|
| the information bar and media player screen each     |      |  |  |
| time (DISPLAY) is pressed.                           |      |  |  |
| To erase display, press (DEPLAY) until it goes away. | OISE |  |  |

way.

\* Displayed content differs depending on the media being played back.

Also, the information displayed during playback and stop differs.

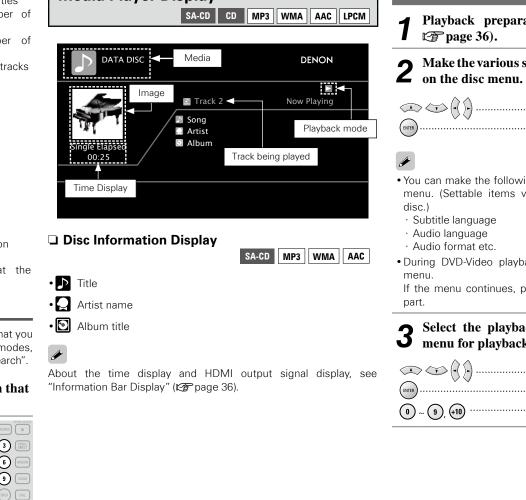
# Information Bar Display

| BD | DVD-A | DVD-V | DVD | DivX |
|----|-------|-------|-----|------|
|----|-------|-------|-----|------|

| Title<br>Title Elapse |              | 1401ter 1/6      |
|-----------------------|--------------|------------------|
|                       | Time display | Disc information |
| Cur                   | sor          | 1.11.1           |

\* Displayed inside the frame at the top of the screen. (See the next page.)





### Disc Information Display

| • Title                     | Title being played/total number of titles |
|-----------------------------|---|
| <ul> <li>Chapter</li> </ul> | Chapter being played/total number o       |
|                             | chapters                                  |
| • Group                     | Group being played/total number o         |
|                             | groups                                    |
| <ul> <li>Track</li> </ul>   | Track being played/total number of tracks |

### □ Time Display

- Title Elapsed
- Title Remain
- Chapter Elapsed
- Chapter Remain
- Group Elapsed
- Group Remain
- Track Elapsed
- Track Remain

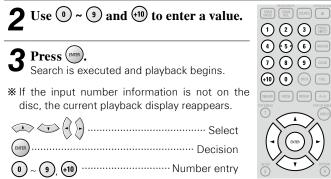
### **HDMI** Output Signal Display

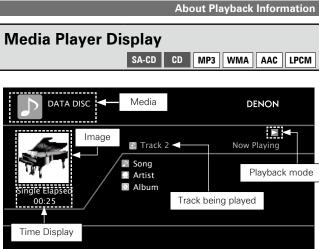
- HDMI1/HDMI2
- Video Info Audio Info Max Channel
- Video output signal format/resolution Audio format being output Number of audio channels that the connected device can receive

### **Search Using Information Bar**

In the orange color cursor area, when you enter the number that you wish to search, that location is searched. There are 4 search modes. "Title search", "Chapter search", "Group search" and "Track search",

|   | Use $ > > > > > > > > > > > > > > > > > > $ |
|---|---|
| - | you wish to search.                         |





| <b>1</b> Playback preparation ("Before Play<br><b>1 2</b> page 36).   | ing a Disc"                    |
|---|--------------------------------|
| <ul> <li>Make the various settings for playback on the disc menu.</li> <li>Select</li> <li>Playback</li> <li>You can make the following settings on the disc</li> </ul>   |                                |
| <ul> <li>menu. (Settable items vary depending on the disc.)</li> <li>Subtitle language</li> <li>Audio language</li> <li>Audio format etc.</li> <li>During DVD-Video playback, press of or end</li> <li>If the menu continues, press () () to part.</li> </ul> | to display the get to the next |
| <b>3</b> Select the playback title or chapter is menu for playback.   | from the top                   |
| Select  |                                |

**Playing BD and DVD-Video** 



Disc Menus

Subtitle

Angle Sub Story

Audio Setup

Top Menu

Setup

Playback

Example] Disc menu

[Example] Popup menu

# Playing BD-Video Compatible with Bonus View

• With a disc that is compatible with bonus view (picture-in-picture), besides the main video (primary video) stored on the disc, you can play back the video director's commentary and simultaneously ongoing sub-story, as well as sub-video such as alternative camera angle (secondary video).

.

A

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

from the popup menu.

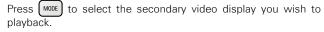
[Example] Top menu

With BD, depending on the disc,

vou can select title and chapter

- Some BD discs use SD cards as the recording memory for Bonus View playback. While the DVD-A1UD is in standby, mount the SD Memory Card beforehand.
- The playback method, etc., is determined by the disc, and varies depending on the disc. Refer to the operation guide of the relevant disc.

## Playing Bonus View



Playing BD and DVD-Video



### [Selectable item]

Main video

Sub video

A

(primary video)

(secondary video)

- **Off** : Does not display Secondary Video.
- **1/X**\*: Displays the first Secondary Video .
- **2/X**\*: Displays the second Secondary Video.
- $\textbf{X/X} \ensuremath{ \star}$  : Displays the X th Secondary Video.
- \*: "X" is the number of Secondary Videos recorded and differs depending on the disc.



[Example] Bonus view

- Insert or remove a SD Memory Card while the power is in standby. If you insert a SD Memory Card while the power is ON, the SD Memory Card may not be read.
- The SD card used for the Bonus View function must have a capacity of 1GB or greater. Also the SD card must be initialized on the DVD-A1UD (127 page 32).

etting

Started

Connections

Setup

Playback

789 (+10) (0) (000) (000)

# **Playing Back Super Audio CD**

Playback preparation ("Before Playing a Disc" **Page 36**).

| <b>2</b> Select        | the playback area and layer with                     | SETUP<br>S<br>(A<br>(A<br>(A)<br>(A)<br>(A)<br>(A)<br>(A)<br>(A)<br>(A)<br>(A)<br>( |
|------------------------|--|---|
| Multi                  | : Plays back the multi-channel area of the HD layer. |   |
| Stereo                 | :Plays back the 2-channel area of the<br>HD layer.   | (ILSPUAY) (ANGLE (THE ALIDIO)<br>SED GRN YEL BLU                                    |
| CD                     | : Plays back the CD layer.                           | PLIFET HEILINE DEE PAGE+  |
| * Pressing (<br>layer. | ▶ plays back the selected area/                      | BACKUSHT  |

### □ When You View the Text or Playback Time Display

See "Media Player Display" (12 page 37).

# ø

- When playing back disc whose selected area or layer does not exist, select the playback area or layer in the order "Multi", "Stereo", "CD".
- The area/layer selected at [LNSE] remains in the memory even when the power is turned off.

# **CD** Playback

- Playback preparation ("Before Playing a Disc" **Dage 36**).

# **2** Press **•**. Playback begins.

SA-CD

- U When You Look at the Playback Time Display See "Media Player Display" (@page 37).

# **DVD-Audio Playback** Playback preparation ("Before Playing (1 2 3 ) a Disc" 😰 page 36).

Select the part for playback with USC

- Audio : Plays back the audio part.
- : Plays back the video part. Video
- ▲ If a top menu is available, select the J playback group and track from the top menu, and then play back.

| $\land \land$                            |   |
|--|---|
| Select                                   | (USPLAY) (ANGLE) (SUB<br>TITLE          |
| Decision or playback                     |   |
| $(0) \sim (9)$ , $(+10)$ ······ Playback | PURE PLETURE DISC<br>DIRECT ADJUST DISC |

U When You View the Text or Playback Time Display

See "Information Bar Display" (12 page 36).

### Change Group/Track

CD

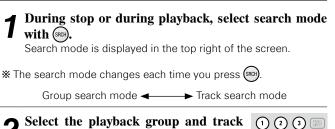
► `

DVD-A

4 5 6

7 8 9 ....

(10 (I) (III) (IIII) (III) (IIII) (III) (III) (III) (III) (III) (III) (III) (III) (III) (I



from the top menu, and then play (4) (5) (6) ..... back.

# $(0) \sim (9)$ (+10 (ENTER)

é

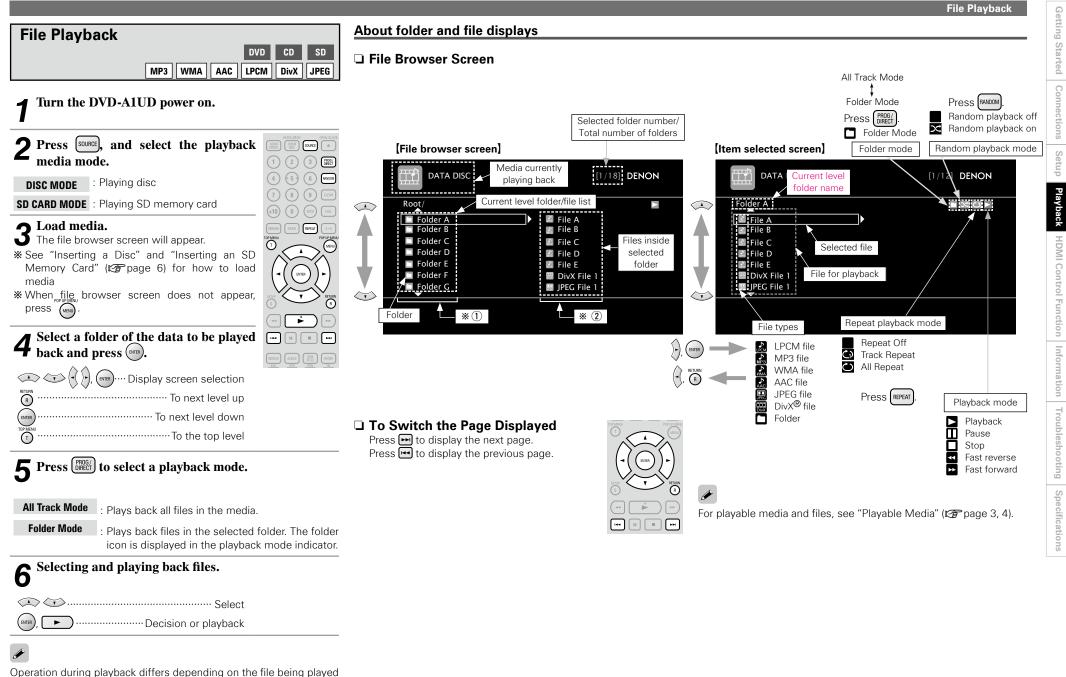
Plays back the group or track of the pressed number \* See "Looking for Specific Sections Using the

Search Modes" (B page 44) for instructions on inputting numbers.

The search mode selected with this operation is memorized until the standby or the disc tray is opened.

| DVD-Audio Playback<br>Bonus Group playback   | Playing Back High-Quality Audio  | File Playback   |
|--|--|---|
| <ul> <li>DVD-Audio may have a bonus group that can be played back on entry of a password.</li> <li><b>1</b> During stop, select "Group" with .</li> </ul>  | (Pure Direct Function)<br>BD DVD-A DVD-V DVD SA-CD CD SD<br>MP3 WMA AAC LPCM DivX JPEG<br>This enables you to play back high quality audio by stopping the   | <ul> <li>About the File Display         The limits on the number of folders and files that can be displaye         by the DVD-A1UD are as follows.         (The limited number includes the root folder.)         Number of folder directory levels         Number of folders         999     </li> </ul> |
| <ul> <li>2 Enter the bonus group number with () (2 () () () () () () () () () () () () ()</li></ul>  | <ul> <li>video signal, etc., output, and outputting the analog audio signal only.</li> <li>Press additional during stop, and then select pure direct mode.</li> <li>Off <ul> <li>This turns off the pure direct function.</li> <li>On</li> <li>This turns off the digital signal output, video signal output and display on the display screen.</li> <li>User Preset 1</li> <li>Operates with the registered pure direct setting.</li> <li>("Pure Direct Setup" @ page 30)</li> </ul> </li> <li>You cannot use @ while the GUI menu is displayed.</li> </ul> | <ul> <li>Number of files</li></ul>  |
| <ul> <li>When you enter the wrong password</li> <li>Press are to erase the input number and then enter the correct number.</li> <li>Select Still Images</li> <li>With DVD-Audio with still images, you can select images displayed during playback.</li> </ul> | <ul> <li>With "On" and the main unit display set to off, indicators other than power are turned off.</li> <li>The pure direct setting returns to "Off" when the DVD-A1UD is put in standby mode.</li> </ul>  |   |
| Press (main during playback.<br>The next still image is displayed.   |  |   |

| PURE | PICTURE<br>ADJUST | DISC<br>LAYER | PAGE + |
|------|-------------------|---------------|--------|



back. See "Operation During Playback" (127 page 42).

**Getting Started** 

Connections

Setup

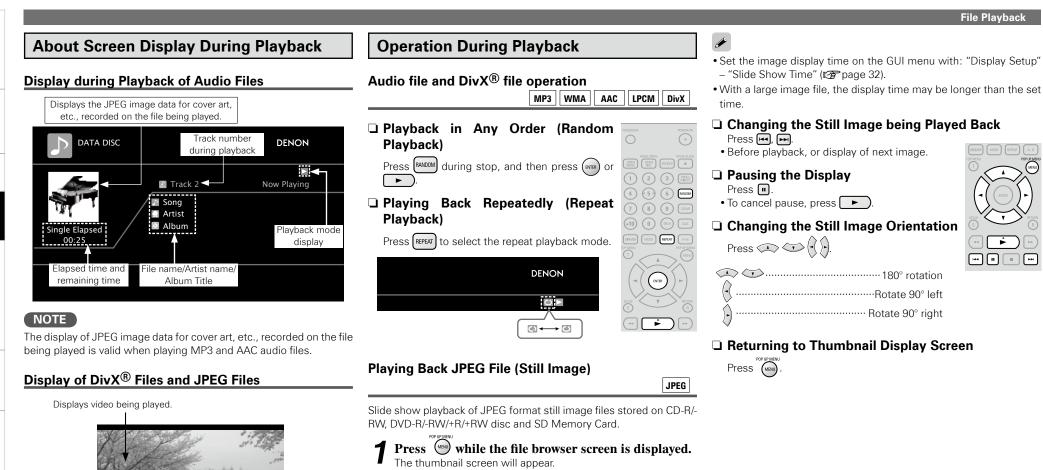
Playback

HDMI Control Function

Information

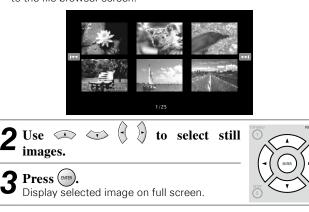
Troubleshooting

Specifications





\* Pressing while the thumbnail screen is displayed returns you to the file browser screen.



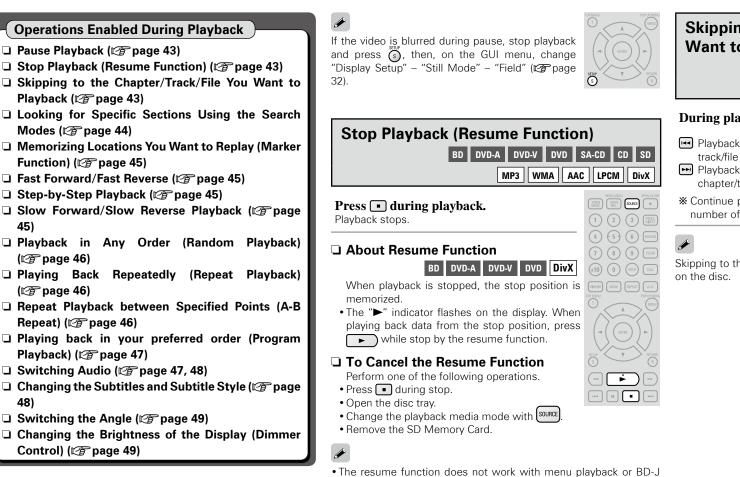
Displays still image being played

Started

Connections

Setup

Playbac



# **Pause Playback**

45)

48)

BD DVD-A DVD-V DVD SA-CD CD SD MP3 WMA AAC LPCM DivX

> ▶)

# Press II during playback.

The "II" indicator will light on the display.

\* Resume normal playback by pressing

- (Blu-ray Disc Java) compatible disc.
- The resume function remains valid even when the standby mode is set. For DivX<sup>®</sup> files, however, the resume function is cancelled even when the standby mode is set.
- The resume function is cancelled when the power is turned off by unplugging the power cord.

# Skipping to the Chapter/Track/File You Want to Playback

BD DVD-A DVD-V DVD SA-CD CD SD

#### MP3 WMA AAC LPCM DivX

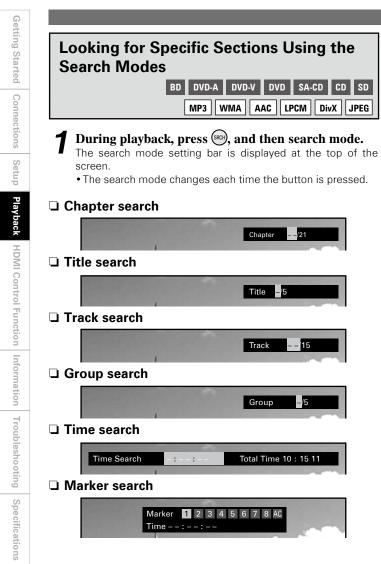
44

H4 II II H4

## During playback, press 🖼 or 🖼.

- Playback begins from the start of the chapter/ track/file being played.
- Playback begins from the start of the next chapter/track/file.
- \* Continue pressing and skip to the chapter/track/file with just the number of times pressed.

Skipping to the start of a title or group may be prohibited depending



Chapter

Title -/5

Track

Group

Total Time 10 : 15 11

#### [Search mode-compatible media and files] Media / file BD DVD-A SA-CD DivX MP3 WMA DVD-V CD LPCM JPEG DVD AAC Search mode Chapter search $\bigcirc$ Title search 0 Time search $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ Marker search ※ $\bigcirc$ $\bigcirc$ 0 0 0 0 Track search $\bigcirc$ Group search $\bigcirc$

#### **% About Marker Search**

Plays back from your selected marker number.

- When the entry mode for chapter/title/track/ group search continues for about 5 seconds with no operation, it is cancelled.
- When the power is set to standby or the disc is removed, the set marker is deleted.

▲ Conducting search condition entry **∠** or setting on the search mode setting

#### bar.

Search specified location on completion of entry.

| $(0) \sim (3), (10)$ Number entry         | •••                |
|---|--------------------|
| Finalizes number                          | CISPLAY<br>RED GRN |
| ( )                                       |                    |
| Finalizes the marker number or plays back | LOIRECT LACUST     |
| CLEAR Marker number cancel                | BAC                |



ø • Entering numbers Entering 3 ······ 3 (NTE) \* 

- \*: Depending on number of recorded songs or chapters, you don't need to use "ENTER" button.
- Search mode does not operate during program or random playback. Use 🖽, 폐 to cue.
- Time search corresponds with title and track playback time. It is not compatible chapter playback time.
- Search mode may not operate depending on the disc.

Getting Started

Connections

Setup

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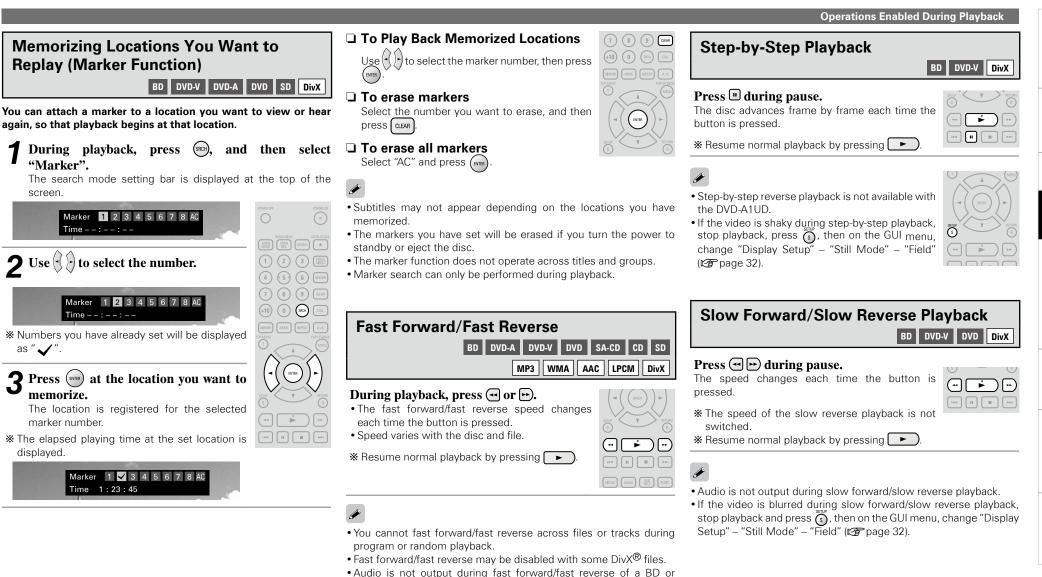
HDMI Co

Function

Information

Troubleshooting

Specifications



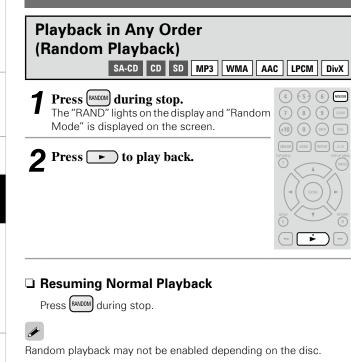
DVD.

Getting Started

Connections

Setup

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**Playing Back Repeatedly** (Repeat Playback) BD DVD-A DVD-V DVD SA-CD CD SD MP3 WMA AAC LPCM DivX JPEG Press (REPEAT) during playback. The repeat mode icon is displayed at the top of the screen. • The repeat mode changes each time the button is pressed. DATA DISC Repeat mode DENON Image: Construction 🔮 Track 2 Now Playing **2** Press **REPEAT** to select the repeat mode. REPEAT \* To resume normal playback, press (REPEAT), and select "Repeat Off".

### About Repeat Mode

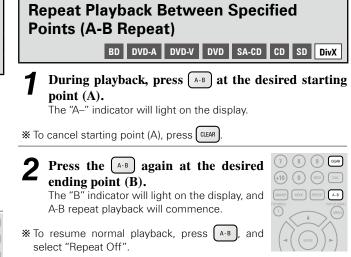
Settable repeat modes vary depending on the disc or file you are playing back.

| Media/File<br>Mode | BD<br>DVD-V<br>DVD | DVD-A | SA-CD<br>CD | MP3<br>WMA<br>AAC<br>LPCM<br>DivX<br>JPEG | Display           |
|--------------------|--------------------|-------|-------------|---|-------------------|
| Chapter repeat     | 0                  |       |             |   | -1                |
| Track repeat       |                    | 0     | 0           | 0   | $ \rightarrow 1 $ |
| Title repeat       | 0                  |       |             |   |                   |
| Group repeat       |                    | 0     |             |   | <b>(</b>          |
| All repeat         |                    |       | 0           | 0   |                   |

# ø

• Some repeat modes may not be accessible depending on the disc.

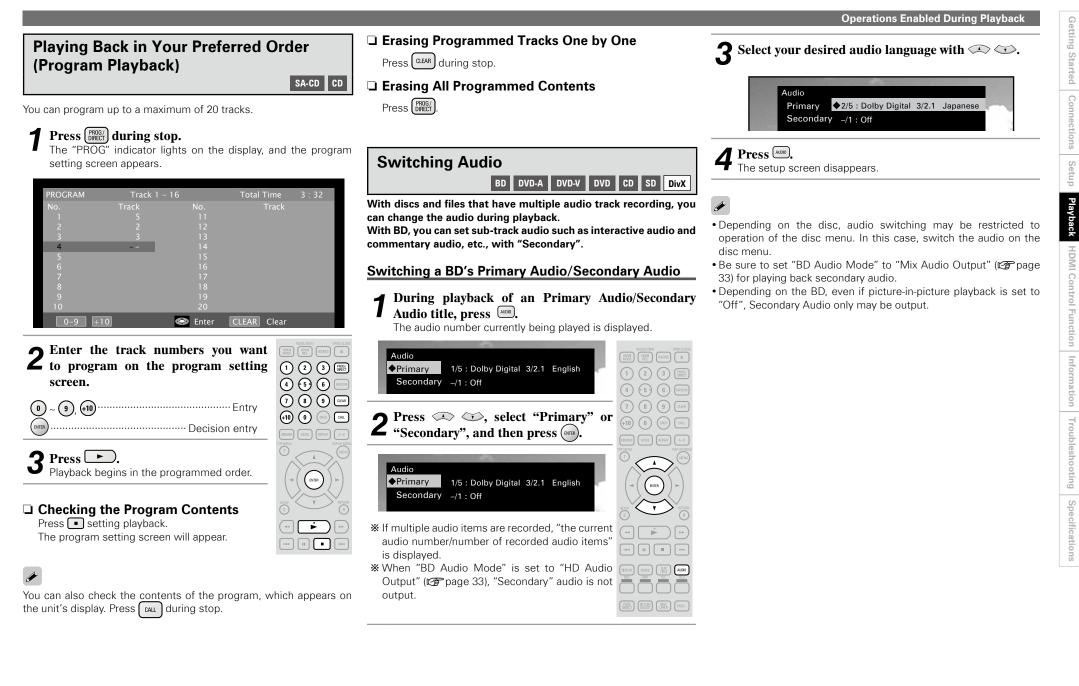
- Depending on the disc, even when set to repeat playback, the disc may not return to the start of title or chapter, and may advance to the next scene.
- Repeat playback is not available during A-B repeat playback.



• You cannot skip title/file with A-B repeat.

ø

- If you perform a search operation during A-B repeat playback, A-B repeat playback is cancelled.
- A-B repeat playback may not be enabled depending on the scene.
- A-B repeat playback of MP3/WMA/AAC/JPEG/LPCM files is not available.
- A-B repeat playback is not available during repeat playback.
- A-B repeat playback may not be enabled depending on the  $\mathsf{DivX}^{\textcircled{R}}$  file.



## Audio Switching (Media Other than BD)

### Press and during playback.

The audio number currently being played is displayed.

#### [Example] DVD



#### 3 Press AUDIO The setup screen disappears.

- With DVD-R/-RW with bilingual soundtrack recording, you can switch between "Main" (main audio) and "Sub" (secondary audio) or "Main/Sub" (main audio + secondary audio).
- In CD audio mode, you can switch "Stereo", "L-ch" (left channel) or "R-ch" (right channel).
- With a DivX<sup>®</sup> file, "MP3" or "Dolby Digital" audio formats and the number of recorded audio modes are displayed. "---" appears for audio other than these.
- With DTS-CD (5.1 music disc), you cannot switch audio modes.

**Changing the Subtitles and Subtitle** Style

BD DVD-V SD DivX

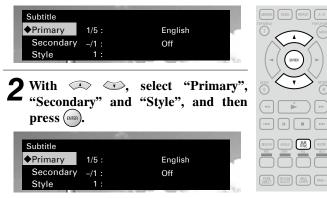
ø

During playback of a disc or file with recorded subtitles, you can switch subtitle on/off as well as subtitle language. With BD, you can change the style of displayed subtitles.

Switching a BD's Primary Subtitle/Secondary Subtitle and Subtitle Style

# Press 🕮 during playback.

The subtitle number currently being played is displayed.



**3** Use (A) (T) to select your desired subtitle language and subtitle style.

| Subtitle        |         |
|-----------------|---------|
| Primary $1/5$ : | English |
| Secondary _/1 : | Off     |
| Style 1:        |         |

# A Press 🐘.

AUDIO

The setup screen disappears.

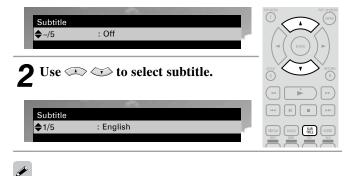
• If a disc does not include subtitles and subtitle style, "Not Available" is displayed.

• Depending on the disc, subtitle switching may be restricted to operation of the disc menu. In this case, switch the subtitles on the disc menu.

### Selecting DVD-Video and DivX<sup>®</sup> file Subtitle



The subtitle number currently being played is displayed.



With a  $\mathsf{Div}X^{\ensuremath{\mathbb{R}}}$  file, the currently playing subtitle number and number of recorded subtitles are displayed, the language option is not displayed.

Operations Enabled During Playback

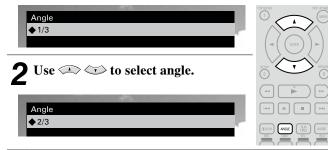
# Switching the Angle

BD DVD-V

During playback of a BD or DVD-Video recorded with several camera angles, you can change the angle.

### Press Aut during playback.

The angle number currently being played is displayed.



**3** Press Are. The setup screen disappears.

NOTE

Angle changing may be restricted, depending on the disc.

# Changing the Brightness of the Display (Dimmer Control)

Press (DIMMER).

The display brightness each time the button is pressed.



→ Normal → Dim → Dark → Off -

# ø

Even when "Off" is selected, the status of operations that are performed appears momentarily on the display if "Display Setup" – "Temporary Display" on the GUI menu is set to "On" (12) page 32).

# **HDMI Control Function**

When you make an HDMI connection with a TV or AV Amp compatible with DVD-A1UD and HDMI control functions, you can perform the following operations by setting the HDMI control function of each device.

### TV or AV Amp power is turned on by operating the DVD-A1UD, and functions change with DVD-A1UD input.

- Turning off the TV's power turns the DVD-A1UD's power to standby.
- Operating the DVD-A1UD via the TV's remote control.

(When the TV's remote control has player operation buttons)

### NOTE

- The HDMI control function controls operations of a TV that is compatible with the HDMI control function. Make sure that the TV and HDMI are connected when you perform HDMI control.
- Some functions may not operate depending on the connected TV or AV Amp. Check the owner's manual of each device for details beforehand.
- When "Other Setup" "Power Saving" on the GUI menu is set to "Power Saving Standby" or "Normal Standby" (Pp page 32), the player's power cannot be turned on using the HDMI control function.
- When "HDMI Setup" "HDMI Control" "Power Off Control" on the GUI menu is set to "Off" (@ page 26), the DVD-A1UD is not set to standby even if the connected device is in the standby mode.
- When "DENON LINK Setup" "DENON LINK Mode" on the GUI menu is set to "4th", the HDMI control function is enabled for the connected devices.

**1** Set the HDMI output terminal corresponding with the HDMI control function.

On the GUI menu, set "HDMI Setup" – "HDMI Control" (P page 26).

\* The HDMI control function will work only on one of the 2 HDMI output terminals on the DVD-A1UD.

# **2** Turn the power on for all the equipment connected by HDMI cable.

- **3** Set the HDMI control function for all equipment connected by HDMI cable.
  - On the GUI menu, set the DVD-A1UD with "HDMI Setup" "HDMI Control" (127 page 26).
- \* Please refer to the owner's manual as regards setting of connected devices.
- \* Carry out Steps 2 and 3 should any of the equipment be unplugged.
- **4** To ensure that the DVD-A1UD's HDMI video output is projected on the TV screen, change the input function of the TV and AV Amp.

**5** When you turn the TV's power to standby, check that the power of the DVD-A1UD and AV Amp also goes on standby.

# ø

If the HDMI control function does not operate properly, check the following points.

- Is the TV or AV Amp compatible with the HDMI control function?
- Is the setting of the DVD-A1UD's HDMI output terminal correct? (Step 1)
- Are the HDMI control function settings of all equipment correct? (Step 3)
- After setting, did you add another HDMI device connection or make any changes in the connections? In this case, perform setting again.

ition

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# **Other Information**

# **About DENON LINK**

DENON LINK is a unique digital, balanced transfer type interface developed by DENON. It offers high speed, high quality transfer of digital audio data with low signal loss. It can be used together with DENON AV Amp equipped with a special DENON LINK connector using a single cable to enable playback with high sound quality. It allows digital transfer of the 192 kHz/24 bit 2-channel digital signals of DVD-Audio discs, PCM multi-channel signals, etc. Full-spec digital transfer of the audio contents of Super Audio CD is possible by connecting a player equipped for DENON LINK 3rd Edition. During processing of DENON LINK, the DENON LINK indicator of the

display lights.

DENON LINK 4th uses the clock of the AV Amp connected by DENON LINK to achieve HDMI signal transfer with little jitter when playing BD.

# **About Advanced AL32** Processing

"Advanced AL32 Processing" installed in the analog output dramatically improves the information volume on the time axis with independent speed signal detection and processing technology for the PCM signal (CD/External input) playback system. In addition to data expansion to 32 bit, it conducts natural interpolation processing with no loss of original data by digital upsampling. The "Advanced AL32" indicator lights on the front panel when Advanced AL32 Processing is in operation.

# **About Copyright Protection** Technology

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|---------------------------------|--|
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| <b>e dts-но</b><br>Master Audio | Manufactured under license under<br>U.S. Patent #'s: 5,451,942; 5,956,674;<br>5,974,380; 5,978,762; 6,226,616; 6,487,535;<br>7,212,872; 7,333,929; 7,392,195; 7,272,567<br>& other U.S. and worldwide patents issued<br>& pending. DTS is a registered trademark<br>and the DTS logos, Symbol, DTS-HD and<br>DTS-HD Master Audio are trademarks of<br>DTS, Inc.© 1996-2008 DTS, Inc. All Rights<br>Reserved. |
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|---------------------|---|
|                     | "AVCHD" and "AVCHD" logo is the trademark of Panasonic Corporation and Sony Corporation.  |
| BONUS <i>VIEW</i> ™ | "BONUSVIEW" is the trademark of Blu-ray Disc Association.   |

# Language Code List

|   | Language       | Code         |
|---|----------------|--------------|
| Α | Abkhazian      | 4748         |
|   | Afar           | 4747         |
|   | Afrikaans      | 4752         |
|   | Albanian       | 6563         |
|   | Amharic        | 4759         |
|   | Arabic         | 4764         |
|   | Armenian       | 5471         |
|   | Assamese       | 4765         |
|   | Aymara         | 4771         |
|   | Azerbaijani    | 4772         |
| в | Bashkir        | 4847         |
|   | Basque         | 5167         |
|   | Bengali;Bangla | 4860         |
|   | Bhutani        | 5072         |
|   | Bihari         | 4854         |
|   | Bislama        | 4855         |
|   | Breton         | 4864         |
|   | Bulgarian      | 4853         |
|   | Burmese        | 5971         |
|   | Byelorussian   | 4851         |
| С | Cambodian      | 5759         |
|   | Catalan        | 4947         |
|   | Chinese        | 7254         |
|   | Corsican       | 4961         |
|   | Croatian       | 5464         |
|   | Czech          | 4965         |
| D | Danish         | 5047         |
|   | Dutch          | 6058         |
| Е | English        | 5160         |
|   | Esperanto      | 5161         |
|   | Estonian       | 5166         |
| F | Faroese        | 5261         |
|   | Fiji           | 5256         |
|   | Finnish        | 5255         |
|   | French         | 5264         |
| _ | Frisian        | 5271         |
| G | Galician       | 5358         |
|   | Georgian       | 5747         |
|   | German         | 5051         |
|   | Greek          | 5158         |
|   | Greenlandic    | 5758         |
|   | Guarani        | 5360         |
|   | Gujarati       | 5367         |
| Н | Hausa          | 5447         |
|   | Hebrew         | 5569         |
|   | Hindi          | 5455<br>5467 |
|   | Hungarian      | 5467         |

|    | Language         | Code |
|----|------------------|------|
| Т  | Icelandic        | 5565 |
|    | Indonesian       | 5560 |
|    | Interlingua      | 5547 |
|    | Interlingue      | 5551 |
|    | Inupiak          | 5557 |
|    | Irish            | 5347 |
|    | Italian          | 5566 |
| J  | Japanese         | 5647 |
|    | Javanese         | 5669 |
| к  | Kannada          | 5760 |
|    | Kashmiri         | 5765 |
|    | Kazakh           | 5757 |
|    | Kinyarwanda      | 6469 |
|    | Kirghiz          | 5771 |
|    | Kirundi          | 6460 |
|    | Korean           | 5761 |
|    | Kurdish          | 5767 |
| 1  | Laothian         | 5861 |
| -  | Latin            | 5847 |
|    | Latvian; Lettish | 5868 |
|    | Lingala          | 5860 |
|    | Lithuanian       | 5866 |
| м  | Macedonian       | 5957 |
|    | Malagasy         | 5953 |
|    | Malay            | 5965 |
|    | Malayalam        | 5958 |
|    | Maltese          | 5966 |
|    | Maori            | 5955 |
|    | Marathi          | 5964 |
|    | Moldavian        | 5961 |
|    | Mongolian        | 5960 |
| м  | Nauru            | 6047 |
| IN | Nepali           | 6051 |
|    | Norwegian        | 6061 |
| 0  | Occitan          | 6149 |
| Ŭ  | Oriya            | 6164 |
|    | Oromo (Afan)     | 6159 |
| Р  | Panjabi          | 6247 |
| •  | Pashto; Pushto   | 6265 |
|    | Persian          | 5247 |
|    | Polish           | 6258 |
|    | Portuguese       | 6266 |
| Q  | Quechua          | 6367 |
| R  | Rhaeto-Romance   | 6459 |
| к  | Romanian         | 6461 |
|    | Russian          | 6467 |
|    | nussian          | 0407 |

|   | Language       | Code |
|---|----------------|------|
| S | Samoan         | 6559 |
|   | Sangho         | 6553 |
|   | Sanskrit       | 6547 |
|   | Scots Gaelic   | 5350 |
|   | Serbian        | 6564 |
|   | Serbo-Croatian | 6554 |
|   | Sesotho        | 6566 |
|   | Setswana       | 6660 |
|   | Shona          | 6560 |
|   | Sindhi         | 6550 |
|   | Singhalese     | 6555 |
|   | Siswat         | 6565 |
|   | Slovak         | 6557 |
|   | Slovenian      | 6558 |
|   | Somali         | 6561 |
|   | Spanish        | 5165 |
|   | Sundanese      | 6567 |
|   | Swahili        | 6569 |
|   | Swedish        | 6568 |
| т | Tagalog        | 6658 |
| • | Tajik          | 6653 |
|   | Tamil          | 6647 |
|   | Tatar          | 6666 |
|   | Telugu         | 6651 |
|   | Thai           | 6654 |
|   | Tibetan        | 4861 |
|   | Tigrinya       | 6655 |
|   | Tonga          | 6661 |
|   | Tsonga         | 6665 |
|   | Turkish        | 6664 |
|   | Turkmen        | 6657 |
|   | Twi            | 6669 |
| U | Ukrainian      | 6757 |
| - | Urdu           | 6764 |
|   | Uzbek          | 6772 |
| v | Vietnamese     | 6855 |
| • | Volapuk        | 6861 |
| w | Welsh          | 4971 |
|   | Wolof          | 6961 |
| x | Xhosa          | 7054 |
| Ŷ | Yiddish        | 5655 |
| • | Yoruba         | 7161 |
|   |                |      |

**Country Code List** 

Country

**A** AFGHANISTAN

ALBANIA

ALGERIA

ANDORRA

ANGOLA

ANGUILLA

ÅLAND ISLANDS

AMERICAN SAMOA

# Getting Started Connections Setup Playback **HDMI** Control Function Information

|    | ANGUILLA                          |
|----|-----------------------------------|
|    | ANTARCTICA                        |
|    | ANTIGUA AND BARBUDA               |
|    | ARMENIA                           |
|    | ARUBA                             |
|    | AZERBAIJAN                        |
| В  | BAHAMAS                           |
|    | BAHRAIN                           |
|    | BANGLADESH                        |
|    | BARBADOS                          |
|    | BELARUS                           |
|    | BELIZE                            |
|    | BENIN                             |
|    | BERMUDA                           |
|    | BHUTAN                            |
|    | BOLIVIA                           |
|    | BOSNIA AND HERZEGOVINA            |
|    | BOTSWANA                          |
|    | BOUVET ISLAND                     |
|    | BRITISH INDIAN OCEAN              |
|    | TERRITORY                         |
|    | BRUNEI DARUSSALAM                 |
|    | BULGARIA                          |
|    | BURKINA FASO                      |
| 6  | BURUNDI                           |
| C  | CAMBODIA                          |
|    | CAMEROON                          |
|    | CAPE VERDE                        |
|    | CAYMAN ISLANDS<br>CENTRAL AFRICAN |
|    | REPUBLIC                          |
|    | CHAD                              |
|    | CHRISTMAS ISLAND                  |
|    | COCOS (KEELING) ISLANDS           |
|    | COMOROS                           |
|    | CONGO                             |
|    | CONGO, THE DEMOCRATIC             |
|    | REPUBLIC OF THE                   |
|    | COOK ISLANDS                      |
|    | COSTA RICA                        |
|    | CÔTE D'IVOIRE                     |
|    | CROATIA                           |
| 52 |                                   |
|    |                                   |

| Code |   | Country                        |
|------|---|--------------------------------|
| AF   |   | CUBA                           |
| AX   |   | CYPRUS                         |
| AL   |   | CZECH REPUBLIC                 |
| DZ   | D | DJIBOUTI                       |
| AS   |   | DOMINICA                       |
| AD   |   | DOMINICAN REPUBLIC             |
| AO   | Е | ECUADOR                        |
| AI   |   | EGYPT                          |
| AQ   |   | EL SALVADOR                    |
| AG   |   | EQUATORIAL GUINEA              |
| AM   |   | ERITREA                        |
| AW   |   | ESTONIA                        |
| AZ   |   | ETHIOPIA                       |
| BS   | F | FALKLAND ISLANDS               |
| BH   |   | (MALVINAS)                     |
| BD   |   | FAROE ISLANDS                  |
| BB   |   | FIJI                           |
| BY   |   | FRENCH GUIANA                  |
| ΒZ   |   | FRENCH POLYNESIA               |
| BJ   |   | FRENCH SOUTHERN<br>TERRITORIES |
| BM   | G | GABON                          |
| BT   | U | GAMBIA                         |
| BO   |   | GEORGIA                        |
| BA   |   | GHANA                          |
| BW   |   | GIBRALTAR                      |
| BV   |   | GREENLAND                      |
| 10   |   | GRENADA                        |
| BN   |   | GUADELOUPE                     |
| BIN  |   | GUAM                           |
| BG   |   | GUATEMALA                      |
| BI   |   | GUERNSEY                       |
| KH   |   | GUINEA                         |
| CM   |   | GUINEA-BISSAU                  |
| CV   |   | GUYANA                         |
| KY   | н | HAITI                          |
|      |   | HEARD ISLAND AND               |
| CF   |   | MCDONALD ISLANDS               |
| TD   |   | HOLY SEE (VATICAN CITY         |
| CX   |   | STATE)<br>HONDURAS             |
| CC   |   | HUNGARY                        |
| KM   | 1 | ICELAND                        |
| CG   |   | IRAN, ISLAMIC REPUBLIC         |
| CD   |   | OF                             |
|      |   | IRAQ                           |
| CK   |   | ISLE OF MAN                    |
| CR   |   | ISRAEL                         |
| CI   | J | JAMAICA                        |
| нк   |   | JERSEY                         |
|      |   |                                |

Code

CU

CZ

DJ

DM

DO

EC

EG

SV

ER

EE

ΕT

FK

FO

GF

PF

TF

GA

GΜ

GE

GH

GL

GD

GΡ

GU

GT

GG

GN

GW

GΥ

HT

HМ

VA

ΗN

ΗU

IS

IR

IQ

IL

JE

JM

IM

GI

FJ

GQ

CY

|    | Country                | Code |
|----|------------------------|------|
|    | JORDAN                 | JO   |
| К  | KAZAKHSTAN             | ΚZ   |
|    | KENYA                  | KE   |
|    | KIRIBATI               | KI   |
|    | KOREA, DEMOCRATIC      | KP   |
|    | PEOPLE'S REPUBLIC OF   | ٨٢   |
|    | KUWAIT                 | KW   |
|    | KYRGYZSTAN             | KG   |
| L  | LAO PEOPLE'S           | LA   |
|    | DEMOCRATIC REPUBLIC    |      |
|    | LATVIA                 | LV   |
|    | LEBANON                | LB   |
|    | LESOTHO                | LS   |
|    | LIBERIA                | LR   |
|    | LIBYAN ARAB JAMAHIRIYA | LY   |
|    | LIECHTENSTEIN          | LI   |
|    | LITHUANIA              | LT   |
| Μ  | MACAO                  | MO   |
|    | MACEDONIA, THE FORMER  | MK   |
|    | YUGOSLAV REPUBLIC OF   | 140  |
|    | MADAGASCAR             | MG   |
|    | MALAWI                 | MW   |
|    | MALDIVES               | MV   |
|    | MALI                   | ML   |
|    | MALTA                  | MT   |
|    | MARSHALL ISLANDS       | MH   |
|    | MARTINIQUE             | MQ   |
|    | MAURITANIA             | MR   |
|    | MAURITIUS              | MU   |
|    | MAYOTTE                | ΥT   |
|    | MICRONESIA, FEDERATED  | FM   |
|    | STATES OF<br>MOLDOVA   | MD   |
|    | MONACO                 | MC   |
|    | MONGOLIA               | MN   |
|    | MONGOLIA               | ME   |
|    | MONTSERRAT             | MS   |
|    | MOROCCO                | MA   |
|    | MOZAMBIQUE             | MZ   |
|    | MYANMAR                | MM   |
| N  | NAMIBIA                | NA   |
| IN | NAURU                  | NR   |
|    | NEPAL                  | NP   |
|    |                        | AN   |
|    | NETHERLANDS ANTILLES   | NC   |
|    | NEW CALEDONIA          |      |
|    | NICARAGUA              | NI   |
|    | NIGER                  | NE   |
|    | NIGERIA                | NG   |
|    | NIUE                   | NU   |

|   | Country                                 | Code |   | Country                         | Code |
|---|---|------|---|---------------------------------|------|
|   | NORFOLK ISLAND                          | NF   | Т | TAJIKISTAN                      | TJ   |
|   | NORTHERN MARIANA<br>ISLANDS             | MP   |   | TANZANIA, UNITED<br>REPUBLIC OF | TZ   |
| 0 | OMAN                                    | OM   |   | TIMOR-LESTE                     | TL   |
| Ρ | PALAU                                   | PW   |   | TOGO                            | TG   |
|   | PALESTINIAN TERRITORY,                  | PS   |   | TOKELAU                         | TK   |
|   | OCCUPIED                                |      |   | TONGA                           | TO   |
|   | PANAMA                                  | PA   |   | TRINIDAD AND TOBAGO             | TT   |
|   | PAPUA NEW GUINEA                        | PG   |   | TUNISIA                         | TN   |
|   | PARAGUAY                                | PY   |   | TURKEY                          | TR   |
|   | PERU                                    | PE   |   | TURKMENISTAN                    | TM   |
|   | PITCAIRN                                | PN   |   | TURKS AND CAICOS                | TC   |
|   | PUERTO RICO                             | PR   |   | ISLANDS                         |      |
| _ | QATAR                                   | QA   |   | TUVALU                          | TV   |
| R | RÉUNION                                 | RE   | U | UGANDA                          | UG   |
|   | ROMANIA                                 | RO   |   | UKRAINE                         | UA   |
|   | RWANDA                                  | RW   |   | UNITED ARAB EMIRATES            | AE   |
| S | SAINT BARTHÉLEMY                        | BL   |   | UNITED STATES MINOR             | UM   |
|   | SAINT HELENA                            | SH   |   | OUTLYING ISLANDS                |      |
|   | SAINT KITTS AND NEVIS                   | KN   |   | URUGUAY                         | UY   |
|   | SAINT LUCIA                             | LC   |   | UZBEKISTAN                      | UZ   |
|   | SAINT MARTIN                            | MF   | v | VANUATU                         | VU   |
|   | SAINT PIERRE AND                        | PM   |   | VATICAN CITY STATE              | VA   |
|   |   |      |   | VENEZUELA                       | VE   |
|   | SAINT VINCENT AND THE<br>GRENADINES     | VC   |   | VIET NAM                        | VN   |
|   | SAMOA                                   | WS   |   | VIRGIN ISLANDS, BRITISH         | VG   |
|   | SAN MARINO                              | SM   |   | VIRGIN ISLANDS, U.S.            | VI   |
|   | SAO TOME AND PRINCIPE                   | ST   | w | WALLIS AND FUTUNA               | WF   |
|   | SAUDI ARABIA                            | SA   |   | WESTERN SAHARA                  | EH   |
|   | SENEGAL                                 | SN   | Ŷ | YEMEN                           | YE   |
|   | SERBIA                                  | RS   | Z | ZAMBIA                          | ZM   |
|   | SEYCHELLES                              | SC   |   | ZIMBABWE                        | ZW   |
|   | SIERRA LEONE                            | SL   |   |                                 |      |
|   | SLOVAKIA                                | SK   |   |                                 |      |
|   | SLOVENIA                                | SI   |   |                                 |      |
|   | SOLOMON ISLANDS                         | SB   |   |                                 |      |
|   | SOMALIA                                 | SO   |   |                                 |      |
|   | SOUTH AFRICA                            | 7A   |   |                                 |      |
|   | SOUTH GEORGIA AND<br>THE SOUTH SANDWICH | GS   |   |                                 |      |
|   | ISLANDS                                 |      |   |                                 |      |
|   | SRI LANKA                               | LK   |   |                                 |      |
|   | SUDAN                                   | SD   |   |                                 |      |
|   | SURINAME                                | SR   |   |                                 |      |
|   | SVALBARD AND JAN<br>MAYEN               | SJ   |   |                                 |      |
|   | SWAZILAND                               | SZ   |   |                                 |      |
|   | SYRIAN ARAB REPUBLIC                    | SY   |   |                                 |      |
|   |   |      |   |                                 |      |

# **Explanation of Terms**

#### Numerics

#### 4:3 letterbox

When a wide (16 : 9) disc is played back by connecting a 4 : 3 TV and the DVD-A1UD, this function plays back the image with black area at the top and bottom.

#### 4:3 pan-and-scan

When a wide (16:9) disc is played back by connecting a 4:3 TV and the DVD-A1UD, this function cuts left and right of the played back image to the 4:3 size according to the disc's control information.

#### А

#### Anamorphic lens

This lens enlarges the 16:9 image to 2.35:1 image when projecting the image using a projector.

#### Aspect ratio

This is the length and width ratio of the TV screen. The conventional TV's screen ratio is 4:3 and the wide screen TV's screen ratio is 16:9.

#### В

#### BD-J (Java)

With BD-Videos, there are fun software with more interactive functions (games) using Java applications.

#### Bit rate

This expresses the read amount per 1 second of video/audio data recorded in a disc.

#### **Blu-ray disc**

This is one-side 1 layer disc having 25GB capacity and can record high vision video movie and games.

#### **Bonus View**

Special images for BD-Videos. It includes comment of the movie director, simultaneously developing sub-story, and images from different angles.

### С

#### Chapter

This is a break intended by a producer who organizes the title of BD or DVD-Video. The chapter search function searches the beginning of this break.

### D

#### Deep Color

This technology allows expression of more number of colors than the conventional 8 bits and can reproduce colors close to natural ones without color streak.

#### **DHCP (Dynamic Host Configuration Protocol)**

This mechanism automatically perform network configuration such as IP address for network devices including DVD-A1UD, PC, and broadband router.

#### Dolby Digital (5.1ch Surround)

This is a stereophonic effect developed by Dolby Laboratories. This is maximum 5.1 channels of independent multi-channel audio system. **Dolby Digital Plus** 

#### This is an extension version of Dolby Digital and is a high sound quality digital audio technology adopted as an optional audio for Bluray disc.

#### Dolby TrueHD

This lossless coding technology is adopted as optional audio for Bluray disc and supports 7.1 channels.

#### Downmix

This function converts the number of channels of surround audio to less number of channels and plays back.

#### DTS

This is an abbreviation of Digital Theater System, which is a digital audio system developed by DTS. When playing back audio by connecting this system with a device such as DTS amplifier, accurate sound field position and realistic sound effect as if you are in a movie theater can be obtained.

#### DTS-HD

This audio technology provides higher sound quality and enhanced functionality than the conventional DTS and is adopted as an optional audio for Blu-ray disc. This technology supports multi-channel, high data transfer speed, high sampling frequency, and lossless audio playback. Maximum 7.1 channels are supported in Blu-ray disc.

#### Dynamic range

The difference between the maximum undistorted sound level and the minimum sound level that is discernible above the noise emitted by the device.

#### F

н

#### Finalise

This is processing that enables playing back of disc of BD/DVD/CD, which was recorded using a recorder, by other players.

# HDCP

When transmitting digital signals between devices, this copyright protection technology encrypts the signals to prevent content from being copied without authorization.

#### HDMI

This is an abbreviation of High-Definition Multimedia Interface, which is an AV digital interface that can be connected to a TV or amplifier. Video signal and audio signal can be connected using 1 cable.

#### Interlacing (interlaced scanning)

This conventional method used to project images on a TV displays 1 frame of image in half and half, respectively as 2 fields.

#### Interactive audio

Audio such as click sound that is generated during operation and is recorded in the title of BD-Videos.



This is an abbreviation of Low Frequency Effect, which is an output channel that emphasizes low frequency effect sound. Surround audio is intensified by outputting 20Hz to 120Hz deep bass.

#### Linear PCM

This signal is uncompressed PCM (Pulse Code Modulation) signal. This is the same system as the CD audio but this uses 192kHz, 96kHz, and 48kHz sampling frequencies in BD or DVD and provides higher sound quality than CD.

#### М

L

#### MPEG

This is an abbreviation of Moving Picture Experts Group, which is an international standard of the moving picture audio compression method. Images of BD and DVD are recorded using this method.

#### Р

#### **Picture-in-picture**

This BD-Video function allows you to view making or commentary scenes in the secondary video while viewing the main story in the primary video.

#### Popup menu

This menu recorded in BD software. While playing back a BD, this menu can be displayed on the front of the screen and can be operated.

#### **Primary audio**

This audio signal is recorded in the main story in BD-Video.

#### Progressive (sequential scanning)

This is a scanning system of video signal that displays 1 frame of video as one image. Compared to the interlace system, this system provides images with less flickering and bleeding.

#### Rating

Depending on the age of the viewer, this function restricts playing back of BD-Video or DVD-Video. DVD-A1UD can be set to restrict viewing in 0 to 254 level for BD-Video, and 1 to 8 level for DVD-Video.

#### **Region code**

This code indicates country or region where the BD or DVD-Video can be played back.

#### S

R

#### Secondary audio

This is audio signals of comment of movie director and other data recorded in the bonus view of BD-Video.

#### Title

This is the unit of content that consists of chapters of BD or DVD -Video. Some BD or DVD-Video may include multiple titles.

Playback

HDMI Control Function

Getting



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**Getting Started** 

Connections

Setup

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**HDMI** Control Function

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#### If a problem should arise, first check the following:

1. Are the connections correct?

- 2. Is the set being operated as described in the owner's manual?
- 3. Are the other components operating properly?

If this unit does not operate properly, check the items listed in the table below. Should the problem persist, there may be a malfunction.

In this case, disconnect the power immediately and contact your store of purchase.

| Symptom  | Symptom Cause / Countermeasure   |                       |
|--|--|-----------------------|
| Power does not turn<br>on.                                 | <ul> <li>Check if the power cord is properly connected.</li> <li>Plug the power supply cord into the power outlet.</li> <li>The safety protection device may be activated. Unplug the power cord once, and wait for 5-10 seconds and then plug it in again.</li> </ul>   | 22<br>-<br>-          |
|  | • DVD-A1UD enters the standby status by safety function when the fan stops. Check the back of the set if something is disturbing the fan rotation.   | 3, 9                  |
| Unable to play back bonus view.                            | • Does the SD Memory Card has more than 1GB of available space?  | 4, 38                 |
|  | <ul> <li>Has the SD Memory Card been initialized by the DVD-A1UD?</li> <li>Was the SD Memory Card inserted while the power of the unit<br/>is on. (Insert the SD Memory Card while the DVD-A1UD is in the<br/>standby status.)</li> </ul>  | 32<br>4, 38           |
| Picture does not appear.                                   | • Switch the TV's input setting to the external input connected to the player.   | -                     |
|  | <ul> <li>Is the Pure Direct function set to "On"? Set to "Off".</li> <li>Also, is "Pure Direct Setup" – "Video Out" on the GUI menu set to "Off" at the "User Preset 1" or "User Preset 2" setting? Set it to "On".</li> </ul>   | 30, 40                |
|  | Check the connection of the video/S-Video/component video cable.   | 19                    |
|  | • Does the "Video Setup" – "Component Resolution" setting on the GUI menu match the connected device's resolution? Set it so that it matches.  | 26                    |
| Video and audio are<br>not output with HDMI<br>connection. | <ul> <li>Check the connection of the HDMI cable.</li> <li>Is the "HDMI" indicator of the display of the DVD-A1UD lighting?</li> <li>Is the Pure Direct function set to "On"? Set to "Off".<br/>Also, is "Pure Direct Setup" – "Video Out" on the GUI menu set to "Off" at the "User Preset 1" or "User Preset 2" setting? Set it to "On".</li> </ul> | 13, 14<br>8<br>30, 40 |
|  | <ul> <li>Check whether the connected display device or other device<br/>supports HDCP. This unit will not output a video signal unless the<br/>other device supports HDCP. See the owner's manual of your TV,<br/>AV Amp, etc.</li> </ul>  | 16                    |
|  | • Check that the setting of the HDMI video resolution supports the resolution of the connected device. When set to "Auto", DVD-A1UD makes the setting automatically.   | 15                    |
|  | • Check that the HDMI mode setting matches the connected content. The connection method of each HDMI mode is different.  | 13, 14                |

| Symptom  | Cause / Countermeasure  | Page    |
|--|---|---------|
| HD audio is not<br>output.   | Set "BD Audio Mode" to "HD Audio Output".   | 33      |
| Picture is not<br>displayed or is  | <ul> <li>The picture may be slightly disturbed directly after fast-forwarding<br/>or reversing. This is not a malfunction.</li> </ul>   | -       |
| disturbed.<br>Picture of a BD-Video<br>or DVD-Video disc is<br>in black and white. | <ul> <li>Connect the DVD-A1UD's video/S-Video/component video output<br/>either directly to the TV or to the TV via the AV Amp. Do not<br/>connect via a VCR (video cassette recorder). Some discs include<br/>copy prohibit signals, and when such discs are played via a VCR<br/>the copy guard system may cause the picture to be disturbed.</li> <li>Is a disc that is not compatible with the player or a disc with</li> </ul> | 19      |
|  | a different region number loaded? (This player supports region code "B" for BD-Video discs, "2" or "ALL" for DVD-Video discs.)  | 3       |
| No sound is heard or the sound is hard to  | • Check the devices whose audio is connected and the speaker connections.   | 11 ~ 22 |
| hear.  | <ul> <li>Is the power of devices whose audio is connected turned on?<br/>Is the input selection set to the input to which the DVD-A1UD is<br/>connected?</li> </ul>   | -       |
|  | <ul> <li>Is the audio output properly selected?</li> </ul>  | 13 ~ 21 |
| Picture freezes<br>momentarily during<br>playback.                                 | <ul> <li>When the disc is scratched or contaminated with fingerprints, the<br/>disc may not be played back correctly. Clean the disc or replace<br/>with a non-scratched disc.</li> </ul>   | 6       |
| pidybaom   | • There may be a problem with the data recorded on the disc.  | -       |
| Playback does not start even when ► is   | • Is there condensation inside the player or on the disc? (Let set for 1 to 2 hours with the power off.)  | 3       |
| pressed, or starts bur<br>stops immediately.                                       | <ul> <li>When the disc is scratched or contaminated with fingerprints, the<br/>disc may not be played back correctly. Clean the disc or replace<br/>with a non-scratched disc.</li> </ul>   | 6       |
|  | <ul> <li>Is the disc loaded upside-down? Load the disc properly, with the<br/>side containing the signals to be played facing down.</li> </ul>  | 6       |
|  | • Is an unplayable disc loaded?   | 3, 4    |
| Subtitles are not displayed.   | <ul> <li>Subtitles cannot be displayed for BD-Video, DVD-Video or DivX<sup>®</sup><br/>files that do not contain subtitles.</li> </ul>  | 48      |
|  | • Is the subtitle setting "Off"? Use a disc menu or to set the (ﷺ) displayed subtitle.  | 25      |
| SD Memory Card<br>cannot be read.  | • The format of the card does not match to this unit or the card is not compatible.   | 32      |
|  | • Is the playback media mode set to "SD CARD MODE"?<br>Select "SD CARD MODE" at [SURGE].  | 36      |

Getting Started

Connections Setup Playback HDMI Control Function Information

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| Symptom   | Cause / Countermeasure  | Page  |
|---|---|-------|
| No return to start-up screen when disc is removed.      | • There may be an internal error. Set the power to standby, wait awhile, then turn the power back on.   | -     |
| The set cannot be operated with the front of the unit.  |   | 7     |
| remote control unit.                                    | Operate within a distance of 7 meters from the remote control sensor.   | 7     |
|   | Remove the obstacle.  | -     |
|   | <ul> <li>Replace the batteries with new ones.</li> </ul>  | 7     |
|   | $\bullet$ Insert the batteries in the proper direction, checking the $\oplus$ and $\Theta$ marks.   | 7     |
|   | <ul> <li>Make the signal code of the remote control match to the signal<br/>code of the unit.</li> </ul>  | 7     |
| The unit is operated by the remote control              | <ul> <li>The unit is operated by the remote control of other DENON products.</li> </ul>   | 7, 32 |
| of other DENON products.                                | <ul> <li>To avoid the unit being operated with the remote control of other<br/>devices, set "Other Setup" – "Remote Control Setting" – "Receive<br/>Legacy Remocon" to "Off" on the GUI menu.</li> </ul>  | 32    |
| Buttons do not work<br>or the unit stops<br>responding. | <ul> <li>Operations may not be permitted by the disc.</li> <li>The safety protection device may be activated. Unplug the power cord once, and wait for 5-10 seconds and then plug it in again.</li> <li>Refer to the instructions of the disc.</li> </ul> |       |
| Playable disc is not<br>ead.                            | • The pickup lens may be dirty. Before requesting servicing, try cleaning the laser pickup with a commercially available lens cleaner. (Do not use a cleaner with brush because it may damage the lens.)  | -     |
| Angle does not<br>switch.                               | • If a BD-Video or DVD-Video does not record multiple angles, angle cannot be switched. Also, multiple angles may be recorded for specific scenes.  | 49    |
| Playback does not start when the title is selected.     | Playback may be prohibited by the viewing restriction setting.<br>Check the "Ratings" setting on the GUI menu.  | 31    |
| The password for rating level has been forgotten.       | <ul> <li>On the GUI menu, perform the "Other Setup" – "Initialize"<br/>procedure.</li> </ul>  | 33    |

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- Some function may not be used in some operation status and this is not failure of the unit. Read the description in this Owner's Manual for details on correct operations.
- The volume may differ from disc to disc. This is due to the differences in how the signals are recorded on the disc, and is not a malfunction.
- During programmed playback, it is not possible to perform random playback or to start playback from the desired track or file.
- Some functions are prohibited on some discs.

| Audio performance                |   | General   |  |
|----------------------------------|---|---|--|
| Signal format :                  | NTSC, PAL   | Power supply :  | AC 230 V, 50 Hz  |
| Applicable discs /memory cards : |   | Power consumption :                                   | 88 W   |
|                                  | 12 cm 1 side 1 layer, 12 cm 1 side 2 layers                                 | (🕼 page 32 "Power Saving")                            | <ul> <li>When in Power Saving Standby : 0.3 W</li> </ul>     |
|                                  | (2) DVD-Video / DVD-Audio discs :   |   | <ul> <li>When in Normal Standby : 0.8 W</li> </ul>           |
|                                  | 12 cm 1 side 1 layer, 12 cm 1 side 2 layers /                               |   | When in HDMI Control Mode :                                  |
|                                  | 12 cm 2 sides 2 layers (1 side 1 layer)                                     |   | 4 ~ 15 W (Changes according to connection status, etc.)      |
|                                  | 8 cm 1 side 1 layer, 8 cm 1 side 2 layers /                                 |   | • When in Quick Start Mode :                                 |
|                                  | 8 cm 2 sides 2 layers (1 side 1 layer)                                      |   | 15 ~ 30 W (Changes according to connection status, etc.)     |
|                                  | (3) Super Audio CDs :   | Maximum external dimensions :                         |  |
|                                  | 12 cm 1 layer / 12 cm 2 layer / 12 cm Hybrid                                |   | 434 (W) x 151 (H) x 410 (D) mm                               |
|                                  | (4) Compact Discs (CD-DA) :   | Weight :  | 18.9 kg  |
|                                  | 12 cm / 8 cm discs  | Remote control unit (RC-1                             | 110)   |
|                                  | (5) Memory cards :  | Remote control type :                                 | Infrared pulse   |
|                                  | SD Memory Card / SDHC Memory Card / miniSD Card /                           | Batteries :   | R6/AA Type (three batteries)                                 |
|                                  | microSD Card  | Maximum external dimensions :                         |  |
| S-Video output :                 | Y output level : 1Vp-p (75 Ω/ohms)  | Weight :  | 227 g (included batteries)                                   |
| -                                | C output level : 0.300 Vp-p   | 5   |  |
|                                  | Output terminal : S-Video, 1 set  | <ul> <li>For purposes of improvement, spec</li> </ul> | cifications and design are subject to change without notice. |
| Video output :                   | Output level : 1Vp-p (75 Ω/ohms)  |   |  |
|                                  | Output terminal : Pin-jack, 1 set   |   |  |
| Component video output :         | Y output level : 1Vp-p (75 Ω/ohms)  |   |  |
|                                  | Pb/Cb output level / Pr/Cr output level : 0.7 Vp-p (75 Ω/ohms)              |   |  |
|                                  | Output terminal : Pin-jack, 1 set   |   |  |
| HDMI output :                    | Output terminal : 19-pin HDMI terminals, 2 sets                             |   |  |
|                                  | HDMI ver. 1.3a  |   |  |
|                                  | (Deep Colour, Dolby Digital Plus, Dolby TrueHD, DTS-HD)                     |   |  |
| Analog audio output :            | Output level : 2 Vrms (10 k $\Omega$ /kohms)                                |   |  |
|                                  | 2 channels output terminal : XLR terminal, 1 set                            |   |  |
|                                  | 7.1 channels output terminal : Pin-jack, 1 set                              |   |  |
| Audio output characteristics :   | (1) Frequency response  |   |  |
| Audio output undiducensilos .    | (1) BD (Multi linear PCM) : 2Hz ~ 22kHz (48kHz sampling)                    |   |  |
|                                  | $\therefore$ 2Hz ~ 24kHz (96kHz sampling)<br>: 2Hz ~ 44kHz (96kHz sampling) |   |  |
|                                  | : 2Hz ~ 88kHz (192kHz sampling)   |   |  |
|                                  | <ul> <li>2 DVD (Multi linear PCM) : 2Hz ~ 22kHz (48kHz sampling)</li> </ul> |   |  |
|                                  | : 2Hz ~ 44kHz (96kHz sampling)  |   |  |
|                                  | : 2Hz ~ 88kHz (192kHz sampling)   |   |  |
|                                  |   |   |  |
|                                  |   |   |  |
|                                  | (4) CD : 2Hz ~ 20kHz  |   |  |
|                                  | (2) S/N ratio : 125dB   |   |  |
|                                  | (3) Total harmonic distortion : 1kHz 0.0008%                                |   |  |
|                                  | (4) Dynamic range : 110dB   |   |  |
| Digital audio output :           | Optical digital output: Optical connector, 1 set                            |   |  |
|                                  | Coaxial digital output: Pin jack, 1 set                                     |   |  |

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Specifications

# \_icense

This section describes software license used for DVD-A1UD. To maintain the correct content, the original (English) is used.

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#### □ Exhibit-C

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Jean-loup Gailly Mark Adler

jloup@gzip.org madler@alumni.caltech.edu

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If you redistribute modified sources, we would appreciate that you include in the file ChangeLog history information documenting your changes. Please read the FAQ for more information on the distribution of modified source versions.

#### Exhibit-D

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#### **Exhibit-E**

The Independent JPEG Group's JPEG software README for release 6b of 27-Mar-1998

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Serious users of this software (particularly those incorporating it into larger programs) should contact L/G at jpeg-info@uunet.uu.net to be added to our electronic mailing list. Mailing list members are notified of updates and have a chance to participate in technical discussions, etc.

This software is the work of Tom Lane, Philip Gladstone, Jim Boucher, Lee Crocker, Julian Minguillon, Luis Ortiz, George Philips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.

 $\mathsf{IJG}\xspace$  is not affiliated with the official ISO JPEG standards committee.

DOCUMENTATION ROADMAP

| This file contains the following sections: |                                 |  |  |  |
|--|---------------------------------|--|--|--|
| OVERVIEW                                   | General description of JPEG and |  |  |  |
|  | the IJG software.               |  |  |  |
| LEGAL ISSUES                               | Copyright, lack of warranty,    |  |  |  |
|  | terms of distribution.          |  |  |  |
| REFERENCES                                 | Where to learn more about       |  |  |  |
|  | JPEG.                           |  |  |  |
| ARCHIVE LOCATIONS                          | Where to find newer versions of |  |  |  |
|  | this software.                  |  |  |  |
| RELATED SOFTWARE                           | Other stuff you should get.     |  |  |  |
| FILE FORMAT WARS                           | Software *not* to get.          |  |  |  |
| TO DO                                      | Plans for future IJG releases.  |  |  |  |
| Other documentation file                   | es in the distribution are:     |  |  |  |
| User documentation:                        |                                 |  |  |  |

Δ

| install.doc             | How to configure and install the LIG software. | 1 |
|-------------------------|--|---|
| usage.doc               | Usage instructions for cipeg,                  | , |
| usage.uoc               | dipeg, jpegtran, rdjpgcom, and                 | 1 |
|                         | wripgcom.                                      |   |
| *.1                     | 10   | Ì |
| .1                      | Unix-style man pages for                       | 4 |
|                         | programs (same info as usage.                  | T |
|                         | doc).  | ( |
| wizard.doc              | Advanced usage instructions for                | ł |
|                         | JPEG wizards only.                             | â |
| change.log              | Version-to-version change                      | ļ |
| 0 0                     | highlights.                                    | ć |
| Programmer and internal | documentation:                                 | i |
| libipeg.doc             | How to use the JPEG library in                 |   |
|                         | your own programs.                             | ć |
| example.c               | Sample code for calling the                    | 1 |
| okampiolo               | JPEG library.                                  | , |
| structure.doc           | Overview of the JPEG library's                 | 1 |
| Structure.uoc           | internal structure.                            | ; |
| 61 H                    |  | 1 |
| filelist.doc            | Road map of IJG files.                         | ( |
| coderules.doc           | Coding style rules please read                 | ć |
|                         | if you contribute code.                        | ١ |

Please read at least the files install.doc and usage.doc. Useful information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.

#### OVERVIEW

This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jaypeg") is a standardized compression method for full-color and gray-scale images. JPEG is intended for compressing "real-world" scenes; line drawings, cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a lowquality image. For more details, see the references, or just experiment with various compression settings.

This software implements JPEG baseline, extended-sequential, and progressive

compression processes. Provision is made for supporting all variants of these

processes, although some uncommon parameter settings aren't implemented yet.

For legal reasons, we are not distributing code for the arithmetic-coding  $% \left( {{{\rm{T}}_{{\rm{T}}}}_{{\rm{T}}}} \right)$ 

variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting

the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats.

The library is intended to be reused in other applications. In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JEIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

We welcome the use of this software as a component of commercial products.

No royalty is required, but we do ask for an acknowledgement in product documentation, as described under LEGAL ISSUES.

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ansi2knr.c is NOT covered by the above copyright and conditions, but instead by the usual distribution terms of the Free Software Foundation; principally, that you must include source code if you redistribute it. (See the file ansi2knr.c for full details.) However, since ansi2knr.c is not needed as part of any program generated from the IJG code, this does not limit you more than the foregoing paragraphs do.

The Unix configuration script "configure" was produced with GNU Autoconf.

It is copyright by the Free Software Foundation but is freely distributable.

The same holds for its supporting scripts (config. guess, config.sub, Itconfig, Itmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software.

(Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.)

So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files.

To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

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REFERENCES

We highly recommend reading one or more of these references before trying to understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is

Wallace, Gregory K. "The JPEG Still Picture Compression Standard", Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44. (Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PostScript file containing a revised version of Wallace's article is available at ftp://ftp.uu.net/graphics/jpeg/ wallace.ps.gz. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections and some added material. Note: the Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in "The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

The best full description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US\$59.95, 638 pp.

The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2).

This is by far the most complete exposition of JPEG in existence, and we highly recommend it.

The JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead; it's much cheaper and includes a great deal of useful explanatory material.)

In the USA, copies of the standard may be ordered from ANSI Sales at (212) 642-4900, or from Global Engineering Documents at (800) 854-7179. (ANSI doesn't take credit card orders, but Global does.) It's not cheap: as of 1992, ANSI was charging \$95 for Part 1 and \$47 for Part 2, plus 7% shipping/handling. The standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

Some extensions to the original JPEG standard are defined in JPEG Part 3, a newer ISO standard numbered ISO/IEC IS 10918-3 and ITU-T T.84. IJG currently does not support any Part 3 extensions.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, revision 1.02. A copy of the JFIF spec is available from:

Literature Department C-Cube Microsystems, Inc. 1778 McCarthy Blvd. Milpitas, CA 95035 phone (408) 944-6300, fax (408) 944-6314

A PostScript version of this document is available by FTP at ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz. There is also a plain text version at ftp://ftp.uu.net/graphics/jpeg/jfif.txt. gz, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems.

IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6).

Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from ftp.sgi.com or from ftp:// ftp.uu.net/graphics/jpeg/. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design.

Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/ JPEG per the Note. libtiff is available from ftp://ftp.sgi. com/graphics/tiff/.

#### ARCHIVE LOCATIONS

The "official" archive site for this software is ftp.uu.net (Internet address 192.48.96.9). The most recent released version can always be found there in directory graphics/ jpeg. This particular version will be archived as ftp://ftp. uu.net/graphics/jpeg/jpeg/src.v6b.targz.

If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact help@uunet.uu.net for information on retrieving files that way.

Numerous Internet sites maintain copies of the UUNET files. However, only ftp.uu.net is guaranteed to have the latest official version.

You can also obtain this software in DOS-compatible "zip" archive format from the SimTel archives (ftp://ftp.simtel. net/pub/simtelnet/msdos/graphics/), or on CompuServe in the Graphics Support forum (GO CIS:GRAPHSUP), library 12 "JPEG Tools". Again, these versions may sometimes lag behind the ftp.uu.net release.

The JPEG FAQ (Frequently Asked Questions) article is a useful source of general information about JPEG. It is updated constantly and therefore is not included in this distribution. The FAQ is posted every two weeks to Usenet newsgroups comp.graphics.misc, news.answers, and other groups.

It is available on the World Wide Web at http://www.faqs. org/faqs/jpeg-faq/ and other news.answers archive sites, including the official news.answers archive at rtfm.mit. edu: ftp://rtfm.mit.edu/pub/usenet/news.answers/jpegfaq/.

If you don't have Web or FTP access, send e-mail to mailserver@rtfm.mit.edu with body

send usenet/news.answers/jpeg-faq/part1

send usenet/news.answers/jpeg-faq/part2 RELATED SOFTWARE

Numerous viewing and image manipulation programs now support JPEG. (Quite a few of them use this library to do so.) The JPEG FAQ described above lists some of the more popular free and shareware viewers, and tells where to obtain them on Internet. If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBMPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making cjpeg/djpeg considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites, notably ftp://wuarchive.wustl.edu/graphics/graphics/ packages/NetPBM/.

Unfortunately PBMPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.

A different free JPEG implementation, written by the PVRG group at Stanford,

is available from ftp://havefun.stanford.edu/pub/jpeg/. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)

#### FILE FORMAT WARS

Some JPEG programs produce files that are not compatible with our library.

The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read. (For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.)

The file format we have adopted is called JFIF (see REFERENCES). This format has been agreed to by a number of major commercial JPEG vendors, and it has become the de facto standard. JFIF is a minimal or "low end" representation.

We recommend the use of TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) for "high end" applications that need to record a lot of additional data about an image. TIFF/JPEG is fairly new and not yet widely supported, unfortunately.

The upcoming JPEG Part 3 standard defines a file format called SPIFF.

SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an official standard rather than an informal one. At this point it is unclear whether SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not.

(In any case, our decoder will remain capable of reading JFIF indefinitely.)

Various proprietary file formats incorporating JPEG compression also exist.

We have little or no sympathy for the existence of these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, open format standards for JPEG files. Don't use a proprietary file format!

TÓ DÒ

The major thrust for v7 will probably be improvement of visual guality.

The current method for scaling the quantization tables is known not to be very good at low Q values. We also intend to investigate block boundary smoothing, "poor man's variable quantization", and other means of improving quality-vs-file-size performance without sacrificing compatibility.

In future versions, we are considering supporting some of the upcoming JPEG Part 3 extensions — principally, variable quantization and the SPIFF file format.

As always, speeding things up is of great interest. Please send bug reports, offers of help, etc. to jpeg-info@ uunet.uu.net.

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You can also contact us individually at: David Turner <david.turner@freetype.org> Robert Wilhelm <robert.wilhelm@freetype.org> Werner Lemberg <verner.lemberg@freetype.org>

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